JULY 1951
Volume 39 Number 3

BULLETIN *of the* MEDICAL LIBRARY ASSOCIATION

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Medical Library Training Courses Conducted by the Veterans Administration

By Foster Mohrhardt

Director, Library Service, Special Services, Veterans Administration Washington 25, D. C.

A RECENT communication to the Veterans Administration states that this agency "last year undertook a notable experiment when it arranged for intensive, short-term courses in medicine and medical bibliography for its medical librarians at universities throughout the United States." Enough interest has been shown in these courses to indicate that it may be profitable to discuss the organization of the courses and to attempt an evaluation in terms of their usefulness to the Veterans Administration.

The original program in 1949 included courses sponsored by the Veterans Administration at the University of Southern California, University of Chicago, University of Illinois, and Columbia University. These schools were selected on the basis of their geographical spread, proximity to important Veterans Administration hospitals, interest in the Veterans Administration training program, and provision of accredited library school instruction. During 1950 it was financially possible to support only one course, which was held at the University of Illinois Medical School campus in Chicago.

The initiation of the program came in 1948 from Dr. E. H. Cushing, Miss Mabel McLaughlin and Mr. Francis R. St. John, and the original plan for a training program of this type was developed jointly by them. General F. R. Kerr, the Assistant Administrator for Special Services, displayed his interest by giving the continuing backing and support that was necessary for the successful completion of the plans. Much of the ultimate success of the course rests upon the interested support which was evidenced in the program by the Veterans Administration Department of Medicine and Surgery. Dr. E. H. Cushing and Dr. R. A. Wolford, members of the Medical Library Advisory Committee, provided much of the required information for the subject program covered in the medical courses.

The basic need for a course of this kind is briefly summarized in a memorandum from Dr. Paul B. Magnuson, Chief Medical Director, to the Administrator of Veterans Affairs, dated November 8, 1948, in which he states:

> It is requested that necessary authority be granted to conduct instructional courses in medical library techniques and procedures. During the past two years, medical libraries have

been developed in VA installations to meet the need of additional research and training programs of the medical service and also to provide staff doctors and such other personnel required with current information on the latest developments in the field of medicine. Books have been procured as rapidly as possible and bulletin subscriptions placed to establish at least the minimum basic collections. It has been impossible to recruit librarians with a knowledge of medical terminology and medical bibliographic reference materials because at the present time only one library school provides any course in this specialized field. There have not been enough medical librarians to create a demand sufficient to justify such specialized courses until the VA found it necessary to develop its medical library service rapidly to keep pace with the medical program. It is proposed that arrangements be made with four of the outstanding institutes to establish special courses for this purpose.

The need for specialized training can be further highlighted by referring to a few statistics covering the development of the Veterans Administration library program. In the ten-year period from 1940 through 1949 medical library book and journal collections had grown from small collections of miscellaneous material to extensive special collections in each of the Veterans Administration hospitals. In the four-year period from 1946 through 1949 the average number of volumes in each of the medical libraries grew from 400 volumes in 1946 to over 1,600 volumes in 1949. In addition to this fourfold growth in the collections there was an accompanying development in the provision of staff service for the collections. Medical librarians were employed to provide service in the larger hospitals; and in the smaller hospitals specific assignments were given to the general librarians for providing service from these collections. Each of the 132 Veterans Administration hospitals in 1949 had at least one medical library. It was very evident that the value of these resources and provisions could be tremendously increased in efficiency and service if specialized training could be given to the librarians who would be assigned to these collections. The establishment of a need and the approval of the program were accomplished at an early date. The difficult part of the program then presented itself in the actual preparation and development of a specific curriculum which would provide our librarians with the training which would make them most useful to the Veterans Administration medical program. The most extensive comparable program, the Medical Library Training Course at Columbia University, was examined in detail and provided information used in the development of the new Veterans Administration course. Specific guide-lines and limitations were early established in order to control as nearly as possible the variations to be considered in the program. The basic elements which guided the planners were:

1. Instruction would be given in the general backgrounds of the various phases of medicine, as well as in the tools and techniques of medical library reference work.
2. The medical courses would be given by physicians.
3. Only those subjects would be covered which would be of anticipated

usefulness to those engaged in Veterans Administration library work. Under this determination it was agreed that coverage of the field of obstetrics would be omitted since this was not pertinent to regular Veterans Administration hospital responsibilities.

Conferences were held by Mr. St. John and Miss McLaughlin with Dr. Lowell Martin and Miss Estelle Brodman, of Columbia University; with Dr. Bernard Berelson, Miss Frances Henne, Miss Margaret Eagan, and Miss Gertrude Minsk, of the University of Chicago; with Dr. Harold Lancour, of the University of Illinois; and with Dr. Louis Steig, Miss Hazel Pulling, and Mrs. Vilma Jacobs, of the University of Southern California. As a result of these conferences a general curriculum was developed to be used by the various universities cooperating in providing this instruction. The outline below shows the general plan which was used for the courses. In general, the

	Monday	Tuesday	Wednesday	Thursday	Friday
1st Week	Introduction to course. What the course hopes to do. Hospital organization 1. Place of library in hospital. 2. Intra-hospital relations. Tour of the library.	General tools in medicine. Dictionaries, Directories, S.G., Q.C.I.M., Current List, Excerpta Medica.	Methods of reference work. Introduction to kinds of medical literature	Anatomy	Physiology
2nd Week	Bacteriology	Biochemistry	Pathology	Medicine	Medicine
3rd Week	Surgery (including Anesthesiology)	Surgery	1. Radiology 2. Radioisotopes	Neurology and Psychiatry	General Question

History of Medicine
Medical terminology
Selection and Weeding
—to be taught as an integral part of each subject.

pattern was to have first a discussion of a specific phase of medicine by the doctor. This included a brief history of the subject, a general discussion, and current research. This was followed by instruction in the bibliographical and reference tools available for library research in this field.

Minor variations in the general plan were adopted at the various insti-

tutions cooperating in the program. For example: At Columbia University the entire course was handled by only two instructors—Dr. Gorrell, who conducted all the courses on the medical subjects, and Miss Estelle Brodman, who presented the medical library program. In all of the other courses various specialists in medicine conducted each phase of the medical instruction.

Each of the courses covered three full weeks of academic work and carried three semester credits of graduate level for those who could qualify for graduate work. Twenty Veterans Administration librarians were selected by the Veterans Administration Library Service, with the assistance of the Veterans Administration Department of Medicine and Surgery, to attend each of the schools. Some of the schools permitted a maximum of five additional non-VA librarians to attend the courses. An over-all continuity of supervision was provided through all the courses by the attendance of Miss McLaughlin at each of the courses. Through her extensive experience Miss McLaughlin was able to recommend many improvements in the organization and development of the program. A thorough analysis and evaluation of the curricula are now being prepared by Miss McLaughlin.

In the foregoing material an attempt has been made to relate the initiation, planning, and carrying out of this specialized training program. Since this material is primarily factual and concrete, the problem of narration is essentially one of organization and presentation. The next phase of this article, the critique or evaluation, is one which is much more demanding.

In an early stage of the planning certain compromises were imposed on those responsible for establishing the program. These limitations were the amount of money available and the wide geographic range covered by those who would attend. Both the participants in the courses and the instructors agree that ideally it would have been far preferable to have selected the participants in each of the four original courses on the basis of background and experience rather than on geographical location as was necessary. Investigations were made in the planning in the field of pre-testing for those attending the classes, and one of the recurring suggestions for improvement in the course was to have a homogeneity represented in the backgrounds of the students. The next area of general agreement for improvement is summarized in the suggestion that efforts be made to give preliminary background instruction and information prior to the attendance of the librarians at the courses.

In evaluating the significance of this program for the Veterans Administration, two sources of information have been most helpful. Whenever possible, attempts have been made to obtain information from the local medical staffs using libraries where the personnel have attended these courses. This information has been supplemented by information provided by the librarians doing the medical library work. Both sources indicate to us very clearly that not

only has there been a noticeable increase in the quality of service provided, but there has also been evidence of an increase in the speed with which the librarian can provide answers for medical library problems. The future status of a course of this kind is dependent entirely upon available funds. It has been conclusively proved to this office that the results in service, morale, and program stimulation have far exceeded the early hopes of those who planned these courses.

The Peyote Ceremony Among the American Indians[1]

By Nolie Mumey, M.D., F.A.C.S.
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RELIGION has played an important role in the life of man since the earliest dawn of civilization. It was simultaneous with the appearance of man-like creatures upon the face of the earth, and it has varied in its numerous cults, serving as a defense against many evil forces. Religion supplied ancient warriors with strong and strange weapons to combat other tribes, and it exerted an influence against adversaries.

It appeared in a new form among the Plains Indians under the term of "Peyotism" in 1870. The Spaniards, who conquered Mexico in 1560, found the natives eating a "diabolic root." This was used by a cult which spread to the Indians of the South and Southwest. Missionaries opposed its use and branded it as an evil, blasphemous rite, for the drug produced illusions in the form of visions, taking the person into a spiritual realm beyond the world of reality, into a heaven independent of a materialistic existence. In the use of the drug there seems to be an intimate association with the spiritual forces. It has been claimed that this was a Christian religion, and it was incorporated under the name of "The Native American Church." Both Protestants and Catholics have bitterly opposed the Peyote cult, but its members have increased from year to year.

The mescal button of the peyote plant has the botanical name of *Anhalonium Williamsii*, *Lopohophora Williamsii*, and *Anhalonium Lewinii;* the local Mexican name along the Rio Grande is *peyote* or *pellote* from the old Aztec name *peyotl*. It is a strange, mysterious, and powerful drug which produces visions and delusions beyond the realm of a normal life. The Indians see it as a spirit; the white man, as an evil power.

The use of the plant for medical and religious purposes is very ancient. There is evidence that this ceremonial rite was known to all the tribes from the Arkansas River to the valley of Mexico, and from the Sierra Madre to the coast, although the Navajo and Moki Indians seem to have no knowledge of it. The Indians looked upon the plant as being sacred in their religious ceremonies. The Mescalero Apaches take their name from it.

James Mooney, of the United States Bureau of Ethnology, first brought

[1] Read at the 50th Annual Meeting, Medical Library Association, Denver, Colorado, June 29, 1951.

the mescal ceremony to public notice in a lecture he delivered before the Anthropological Society of Washington, on November 3, 1891. He writes: "I know from experience that the mescal is a powerful stimulant and enables one to endure great physical strains without injurious reaction; in which respect it seems to differ from all other known stimulants."

The Indians regard the mescal as a source of inspiration and as a key to the glories of another world. They also consider it as a panacea in medicine, being particularly effective in hemorrhage and pulmonary diseases. They frequently use the mescal in decoction, without any ritual, for fevers and headaches.

The habit of eating mescal never develops into a mania. The drug has no serious or lasting effects upon the young or aged, and the habitual use of the plant does not affect the mental faculties. The taste of the mescal is extremely disagreeable and nauseating. Excessive eating of the button for the first time usually causes vomiting. The Indians say that no mental effect is produced by fewer than ten mescal buttons. The usual number for one person in the course of the night is from twelve to twenty.

Botanically it is a species of cactus, a small spineless, turnip-shaped plant with a dried flower growing in the center, which is the only part used. Its habitat is in northern Mexico and southern Texas. The plant has been considered a god—cures are performed through its use, and the mind cleared of worry.

Eating the drug, according to the Indian ritual, reveals the happy hunting ground through the Great Spirit. Peyotism is popular among some of the Indian tribes because of the happiness and exalted mental state it produces, which afford them an escape mechanism from their active mode of existence. The cult prescribes the use of the drug in the form of sacraments in the ceremonies which require certain paraphernalia.

The equipment has not been standardized, for the ritual varies with different tribes. New objects for the services are introduced by certain members. Highly decorative fans, a part of the rites, are symbolic in design and use, representing birds which serve as messengers between the spirit god and man. The size and shape of the fans vary, and feathers from many fowl are utilized, either in a single group or in combinations. The handles usually are covered with fine beadwork designs which are symbolic of the color visions seen by those under the influence of the drug. A tassel hangs from the handle of the fan. The leader carries a slim wooden staff about three feet long, carved with symbols and trimmed with beads. The designs vary in shape depending on the tribe or the leader of the cult. The Peyote rattles are ordinarily made of gourds upon which designs are often painted. These gourds are fastened to bead-covered wooden handles which pass through the gourd and have at the top a tuft of horse hair which is often dyed. A tassel is attached to the lower part of the handle. The rattle is held in a vertical position and shaken with an up-and-down motion.

Drums, important in the ritual of the cult, are made of three-legged cast

iron kettles from which the handles have been removed. A water-soaked buckskin, which tightens as it dries, is stretched over the top. The sides are laced with rope, which when completed outlines a seven-point star. Seven marbles, representing the points of the star, are placed under the skin along the side and serve as lugs on which the rope is caught, which in turn holds the head tight. It could be regarded in design as resembling the peyote button or the Morning Star. The cords are tightened by the prongs of a deer horn. The kettle is half filled with water, and live coals are thrown in it. Herbs or perfume are put in depending on the service—if it is one for the cure of a disease. Only one drumstick is used; this is carved and varies in length. It is a rod without a padded head. The drum represents thunder; the water, rain; and the coals, lightning, according to the Kiowa cult.

Many members of the cult carry their own equipment in a box which varies in design but which is large enough to hold the fans, rattles, etc. Carved designs, symbolic of Peyotism, are usually placed on the sides and top of the box.

No special dress is worn, although the tendency is toward tribal costume. Some of the chiefs wear an elaborate apron, blankets, and feathers. The cult members are not permitted to wear clothing made by the white man. A mescal bean necklace is worn, made from the brown seeds of the plant. Attached to the center of the necklace is a round, beaded bag for carrying a peyote button. These are worn by the chiefs and individual members during the ceremony.

Services are held at regular intervals among some of the Indians; the method of carrying out the ritual varies with different leaders of the cult, depending on the occasion. The services may be held for curative purposes; for appreciation; for a child's fourth birthday; or for the promotion of the health of members of the cult.

The average Indian attributes wonderful mystic powers to the peyote and pays divine honor to the plant by making prayers to it, or in connection with it, and by eating or drinking a decoction of it in order to appropriate the Divine Spirit. The use of peyote by the Indian has been compared to the Christian use of bread and wine—symbols of a deity.

Melvin Gilmore describes the ceremony among the Omaha Indians as follows:

> In the meeting places the worshipers gather in a circle about a fireplace in the center of the lodge or tent. A fire is kept up throughout the meeting. At the west side of the fire sits the leader. In front of him is spread a cloth like an altar cloth; on this lies a peyote top, and at the edge nearest to the leader an open Bible. At his right hand stands a staff symbolically decorated with feather ornamentation. In his hand he carries a fan made of 12 eagle feathers symbolizing the 12 Christian apostles. A water drum is beaten with a low insistent thrumming sound, accompanied by a gourd rattle, while songs are chanted, and the people gaze into the fire or sit with bowed head. Owing to the hypnotic effect of the firelight, the community of thought, abstraction from all extraneous affairs, the droning chant, the thrumming of the drum, and the mental attitude of expectancy induced by the words of the speakers, who

discourse on the visions which shall be seen, combined with the physiological effect of the drug, which stimulates the optic center, the people fancy they really see most wonderful visions of spirits.

The ceremony, similar to a regular church service, is held once a week and varies with each tribe. The Delaware Indians of Oklahoma conduct their meetings in a tepee built with twenty-one poles, with an entrance to the east. This is done so that the rising sun can look in and see the moon, which is a crescent-shaped low altar on the floor west of the center of the tepee with the ends toward the east. A groove along the top of the altar is the Peyote road over which all the visions pass to the spirit. East of the altar is the fire. Straw or blankets are used for seats.

The person who conducts the ceremony is known as the Road Chief, whose duties are to supervise the construction of the tepee, to carry out the rituals, and to appoint three other chiefs—Fire Chief, Cedar Chief, and Drum Chief—making four chiefs in all.[2] The Fire Chief builds and tends the fire, which must be started with a Stone-Age flint. There must be twelve cedar fagots spread in groups of four to form a crescent, with plenty of seeds from a cedar to sprinkle on. All the fuel is furnished by the Cedar Chief.

The ceremony, which starts with a procession of the chiefs, begins after sunset and ends with the rising sun. The Road Chief goes into the tepee, followed by the three other chiefs, to make sure all is in readiness for the ceremony. Men and women enter next and all are seated on the ground. The Road Chief places a large peyote button on the moon mound and recites the following: "After I have placed this 'Father Peyote' here, all this dry peyote and the peyote tea is for your use."

The Road Chief rolls a cigarette made from tobacco and sage, wrapped in a thin corn husk. He then passes the tobacco mixture to the Cedar Chief, who passes it on to his left to other members until it reaches the Fire Chief, who takes a light stick from "Grandfather Fire," and lights the cigarette of each one, lighting his own last. They all take four puffs of the tobacco. A prayer is given by the Road Chief, followed by anyone wishing to make a prayer.

The peyote is passed around the center in the form of tea or dry buttons. The entire evening is devoted to songs and prayers, accompanied by the beating of the drum. Everyone can recite four prayers or sing four songs. There are specific songs to be sung: the Opening Song, the Midnight Water Call, the Morning Water Call, and the Quitting Song.

At midnight the Road Chief sings the Midnight Water Call. The water is brought in by the Fire Chief and blessed by the Road Chief, who goes outside the tepee, faces east, blows one long blast, four short blasts, and another long blast on his whistle. Then he prays, facing the east, south, west, and north. The Cedar Chief sings a song for each prayer, facing in the same directions.

[2] The number "four" is sacred to the Indians, for animals have four limbs and four senses.

The Road Chief again enters the tepee and addresses the members. At five o'clock the Road Chief sings the Morning Water Call, and the Fire Chief states: "A messenger has arrived with the water."

A woman who has not attended the ceremony, and who is either the wife, sister, or daughter of the Road Chief, enters with a pail of water. At dawn the sun looks into the tepee and sees the moon altar which is his woman.

The Peyote breakfast, which has been especially prepared, is brought in by another woman messenger. It is hominy, jerked or dried venison, and raw ground beef. Everyone eats and spends the day sleeping off the effect of the drug.

The visit to the happy hunting grounds, with all its beautiful colors, is intoxicating in character, and the many visions of a fairyland keep the user of the peyote in an exotic state.

In 1936 and 1937 Marvin K. Opler visited the Southern Ute Indians of Colorado on the Consolidated (or Southern) Ute Reservation. In Towaoc, Colorado, he found in nearly every tent peyote gourd rattles of Kiowa type, canes, and peyote drumsticks. The Indians there held weekly meetings—on Saturday nights—and ate the peyote buttons. The practice at Towaoc started about 1931. One Indian told about using the drug for five years, but he had never craved it. Peyote has often been used as a cure for alcoholism.

The primary purpose of this cult on the Reservation is to combat illness; secondary functions are to look ahead into the future by inducing dreams and visions of power, and to prohibit the use of alcohol. The women and girls of this tribe are allowed to attend the ceremonies, which custom critics have condemned because they say it encourages a form of intoxication which is degrading. There is a definite Christian influence in the ceremonies held at Towaoc, Colorado, for the symbols represent the twelve disciples, and the Bible is displayed.

Peyote has a mild non-specific therapeutic effect and some analgesic action, followed by a feeling of contentment and peace with all the world. There is some stimulation of the optic nerve, producing variations in color perception of a secondary nature. The drug is used in treating such diseases as diabetes and cancer, and in fractures.

The chemistry of peyote is rather interesting. Nine alkaloids have been isolated from it. The color visions that appear during the intoxication are due to the alkaloid, mescaline. The intoxication causes a disturbance producing visions of beauty in color and in form, often followed by the appearances of different figures grotesque in size and shape. The pupils become dilated, the pulse slow, the heart action is weakened, there is a sense of loss of time with partial anesthesia and muscular relaxation, and a feeling of religion and of being in another world. Attention is diminished, but intellectual judgment remains unimpaired.

The pleasure of mescal intoxication lies primarily in the enjoyment of the color visions produced, which range from ill-defined flashes of color to beautiful figures, landscapes, forms, and dances. There is very little effect on the reason or will-power of an individual, but the dilatation of the pupils, which always occurs, lasts from twelve to twenty-four hours. The person taking the drug is unable to sleep for nearly twelve hours.

Loss of sense of time exists in all people who use mescal buttons until they reach a state of intoxication, but does not occur in a normal therapeutic dose. There is a feeling of well-being, mental exhilaration, and happy contentment which follows the use of the drug, even in small doses. The Indians, in their religious ceremony, strive for the feeling of contentment which the drug produces. Two different reactions are apt to occur: one, nausea anxiety with the appearance of frightening visions; the other, one of peace, contentment, a state of euphoria.

There seems to be a close relation in effect with the smoking of marihuana. There is a marked change in the body image. If any part of our body is damaged or diseased, we do not feel well; this produces anxiety and discomfort which brings on fear. The peyote intoxication puts the body in a perfect state of fitness. The use of peyote produces physiological changes, accompanied by dramatized images. There is a similarity to the hallucinations of alcoholism. There appears to be a distortion of space and time; also a "restful insomnia."

The color visions produced by the drug seem to be in movement and change constantly. The manifestations are sometimes in the form of known objects and sometimes of abstract, geometrical shapes. Most white men who have experimented with the drug have claimed that the visions are obtained only with the eyes closed—that they disappear when the eyes are opened, even in a darkened room. However, a few have said the visions continued with the eyes open—if in a darkened room.

On Good Friday of 1897 Havelock Ellis took three of the mescal buttons, cut them into small fragments and poured on boiling water twice. He then took it in three portions, by infusion, at hour intervals. He began to experience color visions with purple and green the predominating colors; his skin appeared to be bronze, and his pen and paper took on a golden hue. Visions, which were beautiful and agreeable, passed in front of him. He saw them with his eyes opened or closed and in a light or dark room. The shadows were mostly violet. The effect of the dose taken lasted about twelve hours.

The Peyote religion is based on the power of Father Peyote to cure illness, idleness, and bad habits—a power which is derived from nature, the giver of all things. Peyote lends power to the individual when he is under its influence. It is a defense against a known fear of destruction. The Peyote religion serves to hide inferiority complexes and all anxieties from others. The Indian under its influence has established some harmony between himself and the spirit

world. The drug enters into the religious rite because it produces changes in the body, promotes a feeling of well-being on the user, and its sedative effect allays restlessness and anxieties. Many psychological changes are introduced or projected into the personality of the individual, putting him into another world beyond the realm of fear and anxiety, fusing the ancient spirit religion with a counterpart of modern Christianity.

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What is Task Analysis?[1]

By Hazel B. Timmerman

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TASK analysis is defined as the process of determining the nature of a specific task or duty and of determining the skills, abilities, and responsibilities which are required of the worker for its successful performance, thus differentiating that task from all others. One job or position may have but one task whereas another may be made up of several or a goodly number. If a job is made up of several tasks, these duties should be related closely to one another and be of the same level or degree of difficulty and responsibility.

The analysis of any job whether it is manual, clerical, or professional consists of three parts: (1) defining it completely and accurately, (2) describing each task by showing its component parts and operations, and (3) indicating the various requirements which the job makes upon the worker for its successful performance.

The job analyst obtains his information in several ways: by observing, studying, and obtaining pertinent information from the employee. In industry the analyst usually conducts his survey primarily by observation of the job as it is being performed by the employee. He then studies the job's component parts or tasks to determine their relationships to one another, their weights and levels of difficulty and responsibility, whether rearrangements of operations, tools, etc. will result in more efficient performance, and if all tasks performed make up a proper job sequence. He also determines what skills, abilities, etc. are needed to perform each task.

For clerical and professional positions, however, the first step is not usually that of observing the employee as he performs his work but instead is that of obtaining from each employee a written statement of what the employee does. A questionnaire is developed to obtain this information from the employee. It provides space sufficient for the employee to describe each task he performs *in his own words* and to indicate the percentage of time spent on each task. All duties, whether performed daily or periodically, such as monthly or annually, are included by the employee, and the percentage of time is reported on an annual basis for other than the usual daily or weekly tasks. Other data on the questionnaire usually include such items as employee's name, his position

[1] Presented before the Midwest Regional Group, Medical Library Association, Chicago, Ill., January 27, 1950.

title, the department or unit in which he works, the total hours employed per week, his daily work schedule, the name of his supervisor, the names of the positions supervised by the employee, his rate of pay, and a certification by the employee as to the accuracy of the facts given. Space is also provided for the certification of the employee's supervisor. The supervisor is *not* allowed to alter anything the employee has written. He is free and is, in fact, required to comment on the correctness and the completeness of the employee's analysis of his job.

It has been found very desirable to have the employee use *his own words* in describing his tasks. The use of a check list is not as practical because the employee may not identify in the check list a task he actually performs unless a detailed definition is supplied for each task. He may also check a task he does not perform because the wording on the check list makes him think he performs it. Such misinterpretations by the employee are avoided when the employee tells what he does in his own way.

To accompany the questionnaire a set of instructions is drawn up and provided the employee.

Before the questionnaires and the instructions are distributed, all employees should be told of the project, its purposes, and its uses. This orientation can be done through meetings, by special announcements, and by articles and notices in employee papers. It is essential to sell the employees on the value of the project so that they will understand it is to their own best interests to describe their work as adequately and accurately as possible. Unless the employee knows the whys and wherefores, he may furnish information which is very inadequate, may enter it in such general terms that it is not a good description of the work performed, or he may cover more than one task at a time. For example, he may say he catalogs books. This is too general, as the analyst wishes to know what steps or tasks in the cataloging processes the employee actually performs. Is it classification, recataloging, or subject heading? Is it cataloging of fiction, of medical treatises, or of scientific documents in foreign languages? Does the employee do most of his cataloging by adapting Library of Congress cards or does he do original descriptive cataloging? The analyst must have such details, for without them he cannot evaluate the degree of difficulty of the task nor determine accurately the various types of knowledges required for its proper performance.

After the questionnaires have been filled out, the job analyst begins his detailed study. First he obtains an over-all picture of all the work performed by arranging the questionnaires of the employees in the same department and under the same supervisor in one unit and by studying them as a group. If, from this first hasty review, he finds that certain employees have furnished information in an unsatisfactory form, he may ask that additional material be submitted or he may observe the work by sitting down beside the employee and by watching him perform his various duties.

In most cases, however, it is not necessary to observe the employee's work at this stage. The analyst at this time usually studies each questionnaire very minutely to determine the tasks which are performed in the position, the level and weight of difficulty and responsibility of each task, and the percentage of time spent on each task. After this is done, he is able to write a job description for each questionnaire. It will not be necessary to write a job description for each questionnaire if the analyst finds that several positions are exactly alike, in that the same tasks are performed, these tasks are at the same level of difficulty and responsibility, and the same percentage of time is spent on each task. One job description only would be needed under these circumstances.

A job description is made up of three parts: (1) the job title, (2) the job summary, and (3) the summary of tasks performed. The job title identifies the job, showing how it differs from all others, as Junior Reference Librarian or Chief Catalog Librarian. The job summary defines in a sentence or two the position by showing the reasons this particular position differs from all others. The supervision given and received are also included in the job summary, for example, "Under the direction of the Chief Librarian to have charge of a biomedical reference department having 2 to 4 positions in full-time equivalent including that of the chief, and to do related work as required." The third part of the job description is the summary of the tasks performed. This task summary shows the level of difficulty and responsibility of each task and the percentage of time spent on each. This summary is actually the most important part of the job description. Each task must be explained so logically that a layman, such as a hospital administrator or a faculty library committee member, can obtain a clear concept of the work being done. To accomplish this purpose, it is necessary for the analyst to rephrase the employee's words, either by amplifying the statements or by restating them in a briefer and more uniform way.

Here the librarian will find the *Descriptive List of Professional and Nonprofessional Duties in Libraries*[2] of great help to him. In this volume the duties performed in libraries have been identified, defined, and segregated into two units: professional and nonprofessional. The librarian also will find considerable help in phrasing the tasks uniformly by consulting the A. L. A. classification and pay plans which have been prepared for municipal public libraries and libraries in institutions of higher education.[3] If the analyst is not a librarian,

[2] American Library Association. Subcommittee on Analysis of Library Duties. Descriptive List of Professional and Nonprofessional Duties in Libraries. Preliminary draft. Chicago, American Library Assn., 1948. 75p.

[3] American Library Association. Board on Personnel Administration. Classification and Pay Plans for Municipal Public Libraries. Chicago, American Library Assn., 1939. 189p.

—— Board on Personnel Administration. Subcommittee on Budgets, Compensation and Schemes of Service for Libraries Connected with Universities, Colleges and Teacher Training Institutions. Classification and Pay Plans for Libraries in Institutions of Higher Education. 2d ed., Chicago, American Library Assn., 1947. 3v.

and in many cases he will probably not be, the librarian, by furnishing the analyst with these tools, will provide him with much helpful data to assist him in his difficult task.

This third section, the task summary, must be in sufficient detail to give an accurate picture of the job. It does not necessarily list each duty, especially those occasional duties which are performed during staff illnesses, vacation periods, etc. It does list the percentage of time spent on each duty. For example an Intermediate Reference Librarian may handle reference questions of average difficulty in the general reference reading room 20 per cent of his time, give instructions in the use of the library 5 per cent of his time, compile indexes, lists, and bibliographies 3 per cent of his time, work in the documents and periodical reading rooms giving reference service, and devote 5 per cent of his time to each reading room, etc.

After the job descriptions are written, they are returned to the employee and his supervisor for study. At this point the analyst talks with the employee and often observes the detailed operations of the job as the employee performs the various tasks. An interview with the employee's supervisor is also scheduled. Both the employee and his supervisor must be satisfied that the analyst has described the job accurately and adequately and has allocated the proper percentages of time to each task. It will often be found that changes need to be made in the job description as a result of these interviews and also as the result of the observation of the employee's work by the analyst. When all three, the analyst, the supervisor, and the employee, agree that the job description is accurate and adequate, the employee and the supervisor indicate this fact on the job description.

The next work the analyst performs is to determine the minimum qualifications which are normally required for the performance of the work efficiently. These qualifications consist of such items as education, experience, skills, abilities, and personal traits. At times it will be found that persons without all of the education and experience requirements are performing the duties of the job because of their unusual abilities. It is therefore customary to add to the qualifications section a phrase which states "or equivalent qualifications." With the addition of the qualifications section to the job description the form is then called a job specification.

At times certain other items are added to the job specification, such as desirable qualifications which are in addition to the minimum qualifications, lines of promotion, and special hazards. In libraries, for example, the hazards the bookmobile librarian encounters include being out-of-doors in all kinds of weather, covering territory offering transportation problems, such as slippery mountain roads, etc.

When all the job specifications are written, it is usually considered that the work of job analysis ends and the work of drawing up the position-classifica-

tion plan begins. There is, however, some difference of opinion at what point job analysis ends and the work on the position-classification plan begins. Some draw the line between the two at one point and others at another. There is no clear-cut line of demarcation. Since another speaker is to discuss position-classification plans, I am closing these remarks at this point.

In summary: Task analysis is the first and fundamental step in preparing a position-classification plan. A position-classification plan is a basic tool of administration, as it shows, among other things, the over-all organizational structure of the library. It brings together, in a logical sequence, all the positions of the library into groups or classes showing their relationships to one another and to the entire group. It arranges positions into groups or classes which are similar in nature and in difficulty of duties and in weight of responsibilities, and which require similar qualifications and personal traits for their efficient performance. It enumerates in its job specifications the duties performed in each position. These job specifications are extremely valuable items to have when dealing with the administration of the institution and the faculty library committee. They are also of invaluable help in recruiting and employing personnel. Position classification and therefore its fundamental step, task analysis, is as essential to good organization and administration of the personnel structure of the library as book classification is to the logical arrangement, organization, and administration of books and other library materials.

The Personnel Office and its Administration of Task Analysis[1]

By Mortimer Zimmerman

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I WELCOMED the opportunity to talk with you tonight about job analysis because of the work that you are undertaking in the establishment of definite standards for medical librarians. I am going to talk a little bit about the manner in which the personnel department administers a task analysis program, and then I want to talk to you very briefly about the implications of such a program in practical terms.

I think you are all familiar with the general pattern of obtaining information for job or task analysis purposes. There are a number of ways in which the basic information can be gathered, as we shall discuss later, but right now I want to talk about the uses to which the task analysis can be put. Very often, a task analysis is conducted with only one objective in mind. This objective may include wage and salary setting, work simplification, or improved recruitment and selection. Very seldom are all of these uses intended as a result of a given job analysis, but it is necessary to emphasize that the purpose of the job analysis must be determined in advance of the making of the analysis. The manner in which the information is collected and the manner in which it is presented may differ greatly, depending upon the purpose for which it is intended.

Undoubtedly one of the best known and numerically the most frequent use of task or job analysis is that involved in the classification and evaluation of jobs. In this connection, it is necessary to remember that as far as the Personnel Office is concerned the medical librarian's job is one of the large group of hospital positions which must be related to one another in some manner for salary purposes. This is usually done through job classification. A complete, detailed job analysis is necessary before a job can be classified. The nature of the duties, the degree of responsibility, and the requirements of a position in terms of the worker are all factors which must be spelled out. Going one step further, the Personnel Office utilizes the task analysis in the setting of wage scales. This may be done in any one of a number of ways. For example, the position may be compared with similar positions in other hospitals in the same

[1] Presented before the Midwest Regional Group, Medical Library Association, Chicago, Ill., January 27, 1950.

community, and salary scales set accordingly. If the hospital is a very large one, or if it is connected with a university, there is more likelihood that the scale for the position will be determined on the basis of job evaluation.

From the personnel point of view it is only surprising that a formal system of job evaluation was not adopted sooner. Look at the picture. Long before job evaluation was begun, some person or persons within the hospital had the responsibility for setting wage and salary scales. Very often these scales were set somewhat arbitrarily on the basis of the individual's subjective judgment as to the relative difficulties and responsibilities of a group of jobs. In other words, someone was evaluating these jobs on an informal basis. Since none of us is infallible, it stands to reason that many inequities resulted over a period of time. From the point of view of fair play and equality some consistent, objective measure was needed. At first many hospitals set rates by calling up the hospital down the street and finding out how much was being paid for a given job. This turned out to be a pretty expensive method of keeping up with the Joneses, especially since many hospitals found that the comparison of jobs that they were attempting was impossible because of the disparity in job titles. From this set of circumstances grew the need for and recognition of job analysis and job evaluation.

The natural question which arises concerns the need for job analysis. Why have we become interested in job analysis in the hospital field, and what does it have to offer us? The most important function of job analysis for a hospital lies in its application to job evaluation and classification. Those of us who work in hospit als are just as interested in the amount of money we receive for a given job as are those who work outside hospitals. Those of us who have responsibility for wage administration in the hospital field have recognized the fact that we are not financially able to go into our respective communities and purchase the best available person for every job purely on a salary basis. Our funds are limited. Therefore, it has become even more important to undertake some step to insure that the relationship which we establish between jobs in our hospital, salary-wise, bears some true relation to the complexity, responsibility, and requirements for those jobs. Certainly, hospital employees are as sensitive to internal inequities as they are to differences in level between hospital pay and general community rates. Since the purpose of job evaluation, which is based on job analysis, is to establish these relationships on some objective basis, we can see the contribution of job analysis in assuring employees of the fair intentions of management. Even though your jobs, as medical librarians, have their counterparts in private industry, these jobs still bear a very definite and important relationship to all other jobs within the hospital structure. It is this relationship which largely determines your salary levels, and thus it is job analysis and job evaluation which can help make those determinations as objective as possible. In its administration of job analysis, then, we must remember that the Personnel Office is always interested in some

objective means of establishing the proper relationships. Your efforts to standardize the requirements and program for medical librarians are very valuable in that they establish very definite criteria for comparison. The requirements which you set can be compared with those set by other specialized groups in terms of complexity, responsibility, experience, and training.

I should like to tell you briefly about some of the other uses to which the Personnel Office puts job analysis. The job descriptions which result are invaluable in recruiting and interviewing candidates for vacancies which exist in the hospital. It is almost impossible for any one interviewer or other person to know thoroughly all the duties and requirements of every job in the hospital. If the interviewer has at his disposal a complete description of every job, he is in a position not only to select suitable candidates more efficiently but to do a more intelligent job of informing the applicants regarding the work they will be called upon to do.

Many hospitals have found job analysis to be extremely helpful in planning training programs. Testing programs have also developed as a result of job analysis.

Another important by-product of job analysis, and one which I think you will find more pertinent to your own work, is one that is less frequently recognized. I have in mind the fact that job analysis defines the lines of organization and responsibility, often for the first time in written form.

I want to give consideration to still another use of job analysis in which I have gathered that your group is interested. When an attempt is being made to standardize and gain recognition for a given occupation, it is very necessary that the job duties, responsibilities, and requirements be carefully enumerated and adhered to. It follows that these standards must be compatible with the training and experience which is commonly accepted as necessary for this group, and they must be standards which the group itself can accept. Without doubt the most reasonable approach to an undertaking of this sort is through the use of job analysis to determine what duties are now being performed, what responsibilities are now being shouldered, and what training and experience has been necessary to prepare qualified persons for work in the field. Such a study will reveal unbelievable variations in the complexity of duties and amounts of responsibility that are inherent in the job of medical librarian.

The methods of conducting job analysis will differ from one hospital to another, but in almost all cases they will be performed by one individual or group of individuals responsible for the entire hospital. The job analyst may obtain his basic information through the use of questionnaires, interviews, or a combination of both. Regardless of what method the analyst uses in obtaining his information, his completed job analysis will always contain the same data for all different jobs. The usual description contains three major sections. First, the job must be adequately identified. Such items as job title, department, supervisor's name, number of employees on the job, and the date of the

description are necessary. The second section involves a complete description of the major and minor tasks which must be performed on that job, as well as a delineation of the lines of authority and responsibility. The third area involves a statement of the requirements of the job. These requirements may involve formal training, previous related experience, and emotional or physical characteristics required of the employee.

As you conduct task analysis of various medical librarian jobs, I am sure you will find one distinguishing characteristic in all such descriptions. Each job will contain a combination of what the American Library Association calls "professional duties and non-professional duties." It is the relationship of these two areas which constitutes the heart of the problem of clearly defining a medical librarian's job. You will recognize that such duties as planning, interpreting objectives, organizing, supervising, and controlling acquisitions fall within the realm of what the American Library Association calls professional duties. I believe you will also recognize the other category, of non-professional duties, as exemplified by typing cards, filing, sorting, collating, and other clerical work. To the extent that duties in the latter group occupy a large percentage of the time of the medical librarian, a job analysis and job evaluation will not produce as desirable a wage scale as might be obtained if a larger percentage of the duties were concerned with the more technical aspects of the job. I should like to draw a brief analogy.

The nursing profession has developed historically from the religious orders which provided nursing service on a charitable basis. As nursing developed, it retained many of the non-professional aspects, such as those involved in cleaning rooms, making beds, carrying food trays, and otherwise performing duties which today are more and more being delegated to the nurses' aides. Throughout this period the nurse's salary was extremely low in relation to the number of years of training required to enter the profession. As recently as ten years ago we were paying graduate duty nurses $60 a month plus maintenance. The drive for professional recognition and higher standards brought with it a recognition that the nurse in order to achieve more equitable pay would have to perform a greater percentage of the time at a professional level. As many of you know, the Brown Report, entitled "Nursing for the Future," outlines a program of real professional education for nursing, together with a detailed analysis of the professional duties which a nurse should be expected to assume and the non-professional duties which can be performed by other groups.

I have used the term "profession" a number of times, and thus far have not defined it. Since professionalization is a logical consequence of the interest you have exhibited in job analysis and job standardization, I should like to conclude by reviewing the criteria established by Dr. Flexner of the American Medical Association several decades ago. These criteria are used actively today and are as appropriate as they were at that time. In response to the

question of whether certain occupations have attained professional status or not, Dr. Flexner set the following interpretation:

1. They involve essentially intellectual operations accompanied by large individual responsibility.

2. They are learned in nature, and their members are constantly resorting to the laboratory and seminar for a fresh supply of facts.

3. They are not merely academic and theoretical, however, but are definitely practical in their aims.

4. They possess a technique capable of communication through a highly specialized educational discipline.

5. They are self-organized, with activities, duties, and responsibilities which completely engage their participants and develop group consciousness.

6. They are likely to be more responsive to public interest than are unorganized and isolated individuals, and they tend to become increasingly concerned with the achievement of social ends.

This definition of a profession has a special significance for the personnel administrator who is faced with the problem of selecting a suitable criterion with which to identify a profession. If the job analyst is competent, he will be able to record the duties and responsibilities and requirements in such a fashion as to facilitate the determinations which must be made by the person responsible for the final evaluation and classification of the job.

However, there is one special apprehension which many of us in the hospital personnel field are particularly concerned about and which I want to pass on to you. As increasing specialization has led to formalization and standardization in an increasing number of professions, the focus of interest of many of these groups has been directed *outward*, away from the hospital and the patient, and toward occupational goals. These goals are important, yes, but I feel very strongly that those of us who *elect* to work in the hospital field must accept the best possible care of the patient and the promotion of the welfare of our individual hospitals as primary challenges. This organization or any other in the hospital field can justify its existence if it can answer "yes" to the question: "Will your activity result now or later, directly or indirectly, in better patient care?"

I should like to close by saying that if the standards you establish tend to promote the growth and stature of your profession, if they are clear cut, reasonable, and commonly accepted, and if the standards are applied objectively to your membership, with each person equipped to handle the duties and responsibilities of the professional areas of your work, the task of the personnel director will be greatly simplified in equating your positions with others in the hospital. Real progress in all of the other medical occupations—physician, nurse, laboratory technician—has pyramided *after* standards were set and basic requirements established. The chance to follow a similar path is now yours.

Orientation in the School of Nursing Library

By Charlotte Studer

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THAT the library in the school of nursing has gained and is continuing to gain in importance in nursing education is evident from the emphasis placed on it in the national accrediting program for schools of nursing and also from the increasing number of nursing school librarians. The survey of hospital libraries in Illinois, conducted by the Patients' and Medical Libraries Section of the Illinois Library Association, revealed that more nursing libraries were administered by professional librarians than either the patients' or medical libraries.

With this hopeful trend the nursing school library will more and more come to play the positive role in nursing education which should be its aim. It will be possible to administer the library on what is termed a "teaching level" by Wilson and Tauber in their book *The University Library*. The basis for such administration rests on two assumptions presented by them:

1. That learning is promoted by means of various methods, including library use as well as the lecture, the discussion group, the laboratory exercise, the field trip, etc.
2. That the library may be administered in such a way that it may make a maximum contribution to the learning process.[1]

If we are in agreement with these assumptions, if the library is to become an instrument of teaching, a program of instruction in library use or library orientation is required to carry out such administration effectively.

In addition to this first purpose of library orientation two others may be stated. The planned program of instruction serves as an excellent means of promoting good library relations and publicity; through it we have a splendid opportunity to "sell" the library to the students, to promote the services we have to offer, and to create the friendly atmosphere we want the library to have. So often the nursing school librarian works alone that teaching the students to help themselves aids in efficient administration of the library; if the students are able to locate most of the materials they need, the librarian is free to give better assistance with difficult problems and accomplish more of the many tasks she must do.

[1] Wilson, Louis Round and Tauber, Maurice F. The University Library. Chicago, University of Chicago Press, 1945, p. 383.

The carefully planned program must be concerned with the time when the orientation in the library will be given and what it will include. The student's first days in a nursing school are full of a bewildering array of rules, regulations, examinations, and directions. To include library orientation in this first adjustment period would not seem desirable. On the other hand, the full schedule of freshman classes is very soon under way and time is not easily available. However, the need for knowledge about the library produced as a result of these class meetings, where reference assignments have been given, make this the ideal time from the standpoint of effectiveness for teaching the use of library materials. The orientation, then, should be presented preferably after one or two class meetings.

The amount of time needed will depend on the content to be presented and the number of students receiving the instruction. All past studies of orientation programs indicate that small groups produce the best results; it may, therefore, be necessary to present the course to several sections of the class. The program may be given in a concentrated period of one or two hours; it may be spread out over several days or weeks to be integrated with class assignments; or it may be given in two parts, the first an introductory class in basic library use and the second a more advanced study of library tools given at a later date in the first term or even in the second term.

Close cooperation with the educational director of the school, who plans the class schedules and with the instructors assigning library references or research papers, will insure that the orientation program will correlate with the total educational program and be so scheduled as to achieve maximum effectiveness.

Unlike the interne, the physician, or the student dietitian, who in most cases have had considerable experience in using libraries, the student nurse often comes with little background knowledge about a library. It is true that there are a number of students who have had some college work, including library orientation, and others from large urban high schools with excellent libraries, but a great proportion come from smaller communities or rural areas where contacts with libraries have been slight. This wide range of experience presents a problem in selecting the content of the orientation program.

In many colleges a library test is given prior to the instruction to determine the areas in which the students need most instruction. Such tests might prove helpful in deciding how much basic explanation of the use of the card catalog and other general reference tools should be given. However, because of the special character of the materials in the nursing school library, much of the information gained from these tests would not be applicable, unless adaptations of the standardized tests were made before using them. Assuming that a review of the basic material would be of value to those students who had previous instruction, it seems not unwise to include it without question.

Although the rules and regulations concerning the library are usually in-

cluded with the presentation, oral or printed, of the general rules of the school, a discussion of them should form part of the orientation. Booklets or folders prove a valuable aid in acquainting the students with the rules and making them responsible for observing them. Library hours, loan privileges, fines, the reserve system, and similar topics should be fully and clearly explained. The borrowing procedure for various types of library materials may be included in the printed form or only in the discussion. Since this information is needed for even superficial use of the library, it is best to place it in the initial orientation period.

The students may then be introduced to the library collection—what the library has to offer in the way of standard tools and references, special collections of books, special materials, such as pamphlets, pictures, phonograph records, etc. Indication of the location of these on the shelves, with a discussion of the classification system, follows in logical sequence. Particular emphasis should be placed on the location of books and periodicals pertaining to the field of interest of the affiliating students when they are introduced to the library. The small quarters usually allotted to the library are an asset here; it is possible actually to show the whole library to the students, a difficult feat in the large university library or even the college library. The easily accessible open shelves furnish an excellent laboratory for experience in locating materials and information and a stimulus for encouraging the students to become efficient in helping themselves.

More important than this general idea of the subject arrangement of the library, is the attainment of the ability to use the catalog, the indexes, and reference tools of nursing and medicine. Teaching this, then, becomes the core of the orientation program. The student must know what information she may find on the catalog card and how to use it; she must acquire a working knowledge of the *Quarterly Cumulative Index Medicus*, the *Cumulative Index to the American Journal of Nursing*, the medical dictionaries and encyclopedias, and any other special tool that the library may have. The lecture method is used most frequently in teaching the use of these tools. An exercise requiring the actual use of these tools is of great value not only to give the students experience but to aid in evaluation of the lecture or to determine which students will need additional instruction.

Whether or not instruction in note-taking and preparing bibliographies is included in library orientation varies considerably with different school situations. If there is a course on how to study given by a faculty member, it would undoubtedly be part of it. The librarian may well take over this responsibility if it cannot be given in any other way. This subject matter, too, is usually presented by the lecture method with assignment of problems, and here again is an excellent opportunity for integration with other class work. Bibliographies may be prepared and notes accumulated in preparation for writing a paper for

one of the courses and at the same time serve as an assignment for the orientation class. The library class in which this lesson is taught may be postponed to the time when the students are requested to write a paper and need the information.

In any orientation program there should be some introduction to the other library resources available to the students. If there cannot be planned visits to these libraries, there should at least be a statement of their location and hours and of their usefulness to the students.

In conclusion, there should be some mention of other methods used in library instruction. Visual aids are growing in importance—the use of exhibits, bulletin board displays, and notices or articles in school publications continue to be excellent means of instructing and informing students about the library. More recently the film and microfilm have appeared and are proving to be effective methods. They offer new opportunities for experimentation in improving the library orientation program in the school of nursing.

Microfilms in Relation to Reference Service

By Atherton Seidell
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MICROFILMS have become of interest to librarians in two principal ways. The one of these which has been described in a previous paper is their use as a means of acquiring unique material and in filling gaps in sets of journals. The annoyance which the care of such microfilm copies has caused librarians is described in such a manner as to discourage the far more extensive and practical application of microfilms for the expansion and improvement of reference service. This application as a means of reference is especially important in the case of the larger special libraries but is also of great advantage to the smaller libraries which depend so largely on the larger libraries for specialized reference material. In general it may be said that the use of microfilms for sending out reference material from libraries far exceeds their use as a means of augmenting library collections. Microfilms are intended primarily for the use of individual research workers and only in exceptional cases is it necessary to use them as acquisitions to library holdings.

Microfilm copying is the only innovation in recent years, other than interlibrary loans, which permits librarians to extend the service they render beyond their immediate vicinity. It is interesting to note that permission to inaugurate the first microfilm copying service in any library was obtained by the representation that microfilms would gradually replace the exceedingly vexatious and far more expensive practice of interlibrary loans.

Librarians of smaller institutions are usually first made aware of microfilms by a request from someone to obtain a microfilm copy of an article in a journal available only in some larger reference library. Requesting or purchasing microfilms for members of the organizations which they serve has become an additional duty of librarians, especially in the smaller and more isolated institutions.

Although the reference librarians of larger libraries are the only ones at present who are assuming the obligation of doing microfilm copying for other libraries, it is probable that with the extension of the Hanover Plan of apportioning among groups of libraries the responsibility of collecting the literature in special fields there will eventually be more libraries possessing material not available elsewhere. Furthermore, even the smaller libraries sometimes possess unique material which may be needed by others. Since it is the smaller libraries which profit so largely by interlibrary loans and, recently, by microfilms ob-

tained from the larger libraries, they should welcome the opportunity to reciprocate at least in a small way by furnishing microfilms when called for. The operations involved and efforts expended in substituting microfilms for interlibrary loans are not very different in the two cases. The advantage that the book itself remains in the library for consultation is one that undoubtedly appeals most strongly to librarians. The advantage to the individual of receiving a microfilm instead of the volume from which it was made is that it may be kept for future reference, whereas the book must be returned promptly. Finally, microfilms provide the only practical means for gathering together in one place the widely scattered literature on a given subject. They are indispensable in making digests and reviews of the literature and in compiling textbooks of specialized character.

The degree of organization and amount of equipment for microfilm copying vary in accordance with the number of microfilms to be made. For moderate scale operation the cost may not exceed a few hundred dollars. For this all that is needed is a camera such as the portable Photorecord, which can be placed on any convenient table, and a daylight developing outfit such as the Morse tank. The cost of the film and developing materials is a relatively insignificant item. A photographic dark room is not required, but only a closet or simply a light-proof bag in which the exposed film may be transferred from the camera magazine to the developing tank. The several steps of developing, fixing, and washing can be performed near any convenient wash basin and the length of developed film can be cut and suspended from a string for drying. Very limited, if any, preliminary photographic experience is needed since all the steps of the process are precisely fixed and easily performed. In fact no more qualifications are needed than possessed by the lowest paid employee of the library.

In the organization of a service on a larger scale somewhat more equipment will be required and there arises, of course, the necessity of systematic planning of the work in order to keep track of the orders and their execution. All of this, however, is no more complicated than any of the other library operations connected with service to readers and borrowers.

Since the sole purpose of microfilm copying is the improvement and extension of library service, there is no reason for considering it in any other light than as a legitimate library function, the cost of which is to be absorbed in the general operating expenses in exactly the same manner that the cost of interlibrary loans is absorbed. There is no more justification for making microfilm copying pay its way than there would be for charging for interlibrary loans or requiring readers and borrowers to pay the cost of the service to them. Special libraries exist for the purpose of promoting research and learning, and no discrimination should be made between the service to students and research workers who come into the library and that rendered to those at a distance.

Since photostats of publications do not require special means for reading

them, it is evident that they would be a more acceptable substitute for interlibrary loans than microfilms. However, they require a far larger equipment and are very much more costly to make. Furthermore, enlargements which are equally as good as photostats can be made from microfilms. Anyone desiring enlargements can make his own but the microfilm itself can be made only in the library. Since microfilms are adequate copies of reference material, there is no obligation for librarians to provide a refinement which those who desire them can make for themselves.

The misgiving most frequently expressed in regard to furnishing microfilms without charge is that the privilege would be abused. The possibility of this, however, is quite remote. The reference material used in research is all of a highly specialized character, and only those capable of using it will know of its existence and merit the aid of librarians in obtaining it. It is exceedingly rare that the number of requests by those who come into a library are questioned, and there is no more reason to expect that persons desiring microfilms will ask for more than are actually needed. There has been no evidence of this in the case of the microfilm services conducted on the free basis, either here or in France. Furthermore, if there should be any apparent abuse, it would be no more difficult to restrain than it is to curtail interlibrary loans. Except in rare cases requests for microfilms would all be routed through librarians and they would have the same control of this service that they do of all the other services they render.

There is, consequently, no justification for the apprehension that free microfilm copying would be abused and result in an additional burden on libraries which they should not be expected to assume. On the other hand, it would permit increasing the number of users of the library at no greater expense per item used than at present. Evidence of increased use of a library is the one valid justification for additional financial support of its operation.

It may be concluded, therefore, that librarians should regard microfilms simply as a means by which they can render their resources more conveniently and completely available to all, both near and far, who are engaged in research. They permit fulfilling more perfectly the purpose for which special libraries exist, namely, the advancement of science and learning.

Johann Sebastian Bach (1685–1750) in Medical History

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"BUT to proceed, I have seen a vast variety of singular animals, such as dromedaries, camels, &c. and particularly at Leipsick, where a celebrated master of music, who had already arriv'd to his 88th year, received his sight by my hands . . ."[1] In this incongruous manner, the "ophthalmiater" John Taylor (1703–1772) alludes to his part in the last illness of Johann Sebastian Bach. True, Bach was only 64 years of age when he fell into Taylor's hands, but with Taylor almost any elderly person was either 88 years old or "near arriv'd to his 90th year"[2]; Bach never recovered his eyesight, but then Taylor never did care to report his failures.

Bach was a vigorous, robust, and healthy man throughout his life; he had, however, always been nearsighted ("sein von Natur blödes Gesicht") and his friends believed that his vision was weakened even more by his "unbelievable industry" which made him spend whole nights studying, reading, and copying. When he finally fell victim to a serious and painful eye disease,[3] they were greatly disturbed and, as a last resort, advised him to call in the traveling oculist, "Chevalier" John Taylor, who happened to be in Leipzig at that time (December 1749 or January 1750). It was Taylor of whom his contemporary Henry Jones said[4] (this was, of course, long before the days of radio and television) "never was the art of Puffing displayed to such Perfection," while Samual Johnson declared him "an instance of how far impudence will carry ignorance."[5]

[1] Taylor, John. The history of the travels and adventures of the Chevalier John Taylor ophthalmiater. London, 1761. v. 1 [pt. 2], p. 25.

[2] cf. *op. cit.*, v. 1 [pt. 2], p. 45; v. 2, pt. 23, etc.

[3] For descriptions of Bach's last illness, see Agricola, J. Fr. and Bach, Ph. E. Denkmal . . . oder . . . Leben Johann Sebastian Bachs, Musicdirectors zu Leipzig, (so-called "Nekrolog."). In: von Kolof, L. C. Mizler. Musikalische Bibliothek., v. 4, pt. 1, p. 158–173 (p. 167). Also Forkel, J. N. Über Johann Sebastian Bachs Leben, Kunst und Kunstwerke. Augsburg, 1925 (first published 1802), p. 10–11. (These are the only primary sources in existence).

[4] The life and extraordinary history of the Chevalier John Taylor; written from authentic materials . . . by his son. London, 1761, v. 1, p. 196. The actual author is Henry Jones (cf. Dictionary of National Biography, London, 1898. v. 55, p. 442).

[5] Boswell. Life of Johnson, ed. Croker, 1848. p. 630. Quoted in Dictionary of National Biography, London, 1898. v. 55, p. 441.

Taylor performed two operations on Bach, both of them unsuccessful. The result was an obstinate inflammation and total blindness. This meant that Bach had to submit to the drastic and desperate "postoperative treatment" employed by Taylor in cases of failure. Elias Friedrich Heister has given us a caustic and unsparing description of Taylor's methods which "endangered the very lives of his patients."[6] These methods combined local irritation of the eye by repeated incisions and cataplasms with excessive use of the entire dubious armamentarium of the times (including calomel, cantharides, bleeding, etc.). They decisively weakened Bach's organism and he never recovered. In a darkened room he dictated his last work, an organ fantasy on a chorale earlier entitled "When we are in most dire need"; now with death close at hand, he changed the title to "I now appear before Thy throne."[7] It is reported that he regained his sight for a few hours ten days before he died, but this temporary return of vision undoubtedly was a hallucination.[8] A few hours later he suffered a "stroke" which was followed by a "hot fever"; he died on 28 July 1750[9] at a quarter to nine in the evening "despite all possible efforts of two of the best physicians at Leipzig."

We have no knowledge of Taylor's diagnosis nor, indeed, the nature of Bach's affliction. The patient's history—his age, the sudden onset of violent pain in the eye, the lack of perception of light in the last stages, and finally the stroke preceding his death—points to glaucoma, possibly hemorrhagic. This syndrome, according to Duke-Elder,[10] was "not adequately recognized until the detailed clinical description of Beer"; nevertheless, the questionable Taylor distinguished between cataract and glaucoma, characterizing the latter—more than vaguely indeed—as a disease "wherein the crystalline humor as well as its capsule are opaque, the diameter of the lens is enlarged and this enlargement and the degree of opaqueness are the same throughout."[11] That Taylor's diagnosis actually may have been "glaucoma" (as he understood it) appears somewhat likely because he performed two operations and his therapy for glaucoma

[6] Heister, E. F. Besondere Nachricht wegen des . . . Oculisten D. Taylors . . . Helmstädt, 1736. (See particularly p. 42).

[7] Spitta, P. Johann Sebastian Bach, ed. by W. Schmieder. Leipzig, 1935. p. 364. The fantasy may be found—with both titles—in Bach, J. S. Organ works (Augener's Edition). London, 1914. v. 10, p. 1336–1339.

[8] Vollhardt, M. Über das Augenleiden Joh. Seb. Bachs, seinen Operateur und wie es diesem später in Dresden erging. Med. Welt 9: 1825–1829, 1935.

[9] Forkel is evidently mistaken in giving the death date as 30 July; cf. the letter of Anna Magdalena Bach addressed to the University of Leipzig on 17 October 1750 (reprinted in David, H. T. and Mendel, A. The Bach reader. New York, 1945. p. 190. Also the excerpt from the death-register of the St. Thomas-Kirche, *ibid.*, p. 188).

[10] Duke-Elder, W. Stewart. Textbook of ophthalmology. St. Louis, 1947. v. 3, p. 3282.

[11] Translated from his Kurzer Auszug . . . von zwey hundert und zwey und vierzig Krankheiten. Frankfurt a. M., 1750. p. 61. Another equally hazy definition is reprinted in Coats, G. The Chevalier John Taylor. R. London Ophthalm. Hosp. Rep. 20: 1–92, 1915 (p. 63).

implied surgery in two stages.[12] On the other hand, the second operation may simply have been undertaken because of his unwillingness to cease and desist after initial failure; other sad examples of his persistence are reported.[13] In Bach's case we have at least the small satisfaction of knowing that his eyesight was lost in any case. All else is hypothetical.

Bach was buried on 31 July 1750; evidence that his contemporaries, and particularly his Leipziger "Landsleute," did not properly appreciate his greatness is provided by the fact that the location of his grave fell into oblivion. From an incidental remark in the *Nekrolog*[14] it was known that he was buried near the St. Johannes-Kirche; there was also a "poorly founded" oral tradition to the effect that Bach had been buried "six steps in front of the small entrance on the left side of the Church."[15] When in 1894 the old church was to be replaced by a new and larger one, part of the old cemetery surrounding it had to be included, and it was then decided to search for the remains of Bach while the excavation work was going on.[16] Preliminary archival research yielded the valuable information, finally located in the account books of the Johannes-Hospital, that Bach had been buried in an oak casket.[17] This discovery was the more important as only 12 out of 1400 bodies buried in the year of Bach's death were resting in oak caskets; three of these were found on October 22, 1894 and opened in the presence of the great anatomist of the University of Leipzig, Prof. Wilhelm His (1831–1904). One contained the complete skeleton of an "elderly man, not very tall but well-built." The skull was "strong and of characteristic form," presenting a receding forehead, a strong glabella, a nasal bone jutting out at a sharp angle, relatively low orbital cavities whose width exceeded their height, and strong jawbones with a slightly protruding lower jaw. It was immediately evident to His that this was not an ordinary skull ("Dutzendkopf")—a comforting conclusion because any indifferent formation would have excluded further investigation.

The first step in the meticulous process of identification undertaken by His

[12] Taylor, J. Mechanismus, oder Neue Abhandlung von der künstlichen Zusammensezung des menschlichen Auges. Frankfurt a. M., 1750. p. 156 sq.

[13] Heister, E. F. *op. cit.*, p. 31 sq.

[14] Nekrolog, p. 172.

[15] Wustmann, G. Die Auffindung der Gebeine Johann Sebastian Bachs. Grenzboten 54: 415–425, 1895 (p. 415–416). An earlier article by the same author (Bach's Grab, in Grenzboten 53: 117–126, 1894) was not available for examination.

[16] The following report on the finding and identification of Bach's remains is based on (a) His, W. Johann Sebastian Bach; Forschungen über dessen Grabstätte, Gebeine und Antlitz. Leipzig, 1895, and (b) His, W. Anatomische Forschungen über Johann Sebastian Bach's Gebeine und Antlitz . . . Abhandl. d. Math.-phys. Cl. d. k. sächs. Gesellsch. d. Wissensch. 22: 379–420, 1895. Also used was Die Auffindung der Grabstätte J. S. Bach's. Musik. Wbl., 26: 339–340, 1895.

[17] "4 Thlr. zahlte der Todtengräber Müller wegen Herrn Johann Sebastian Bach's eichenem Sarg."

was a comparison of the skull with the few authentic portraits of Bach, particularly the two paintings by J. G. Haussmann then available at Leipzig. The comparison showed not only a general agreement as to the basic form, but the portraits also presented the very physiognomic traits described before as characterizing the skull. His, who was as thorough as he was resourceful, felt that this result was "quite interesting" but not at all conclusive and that only the help of a good sculptor offered some hope of solving the problem. If an artist were able to mould a portrait-like bust over a plaster cast of the skull, then there would at least be proof of the possibility that the skull was Bach's. Accordingly, the sculptor C. Seffner was approached and was set to work in a room containing the Haussmann portraits and a few etchings of Bach; within a few days, he created a work "the distinctive quality of which moved all those who had occasion to see it." His now considered it "likely" that the skull was genuine. A control experiment was next performed by Seffner: a bust of Händel cast over the skull proved to be an "impossibility per se" ("innere Unmöglichkeit"). It was an acceptable likeness, but areas where the soft parts are very thin, like the forehead, had to be filled out with thick layers of clay while in other areas the bone was almost bare where the soft parts are naturally thick, like the chin. Thereupon, His redoubled his efforts; he had the City Council appoint a Committee of six which, interestingly enough, included one librarian, Dr. E. Vogel, an expert on the iconography of Bach. The Committee was first to examine skeleton and skull, then to appraise the Bach portraits and, finally, to "ascertain the degree of certainty attainable in reconstructing the soft parts above a skull."

The skeleton presented numerous exostoses in the area of the vertebral column and elsewhere, while the skull showed an advanced stage of closure of the sagittal, coronal, and lambdoidal sutures. These indications that the skeleton belonged to an elderly man were confirmed by F. Hesse (1849–1906),[18] American-trained professor of dentistry at the University of Leipzig, who was able to diagnose senile atrophy of the alveolar processes. Another interesting observation was made by Hesse: even though the skull had only nine teeth, it could be seen that the cutting edges of the incisors rather than their labial or lingual surfaces were worn down. This meant that the lower jaw must have protruded to some extent—a feature clearly present in all the known portraits of Bach.

The next step in the Committee's work was to make a critical examination of the portraits; this task was left to Dr. Vogel and Seffner, and as it lay mainly in the field of art criticism, we refer the interested reader to the original sources quoted for further information. In contrast, the problem of reconstructing the soft parts over the skull is of the highest anatomical interest. A few years be-

[18] Hesse, F. Bericht über Kiefer und Zähne des Schädels. In His, W. Johann Sebastian Bach. Leipzig, 1895, p. 20–22.

fore, H. Welcker[19] had developed a "profile-method" by which a correct profile of the soft parts could be drawn over a skull. He applied this method, based on a limited number of measurements taken from 13 male cadavers, in the heated controversy on the genuineness of the so-called "Schiller-Schädel."[20] This method could be used only because Schiller's death-mask was available for comparison with the profile thus "calculated" by Welcker, but no death-mask of Bach had been taken and all his portraits showed a frontal view. Therefore, His was justified in stating that "our profile constructed over the skull on the basis of the measurements found was likely to be Bach's profile only if it could be incorporated in a bust agreeing with his en-face portraits."

His's thoroughness in taking these measurements is borne out by the fact (particularly remarkable in view of the highly argumentative inclination of German scholars) that the positive result announced by him has found general acceptance. He took 19 different facial measurements of 37 cadavers by using a simple method: A sewing needle over which a thin rubber-disc with a hole in the center had been placed was lubricated and inserted vertically into the skin. Then the rubber disc was pushed down to the skin and, after the needle had been pulled out, the distance from the needlepoint to the disc was measured. The measurements yielded the important result that a certain normal thickness of the soft parts over every area of the face can be assumed; this median thickness of any given area varies only very slightly in normal subjects, according to sex and age. Consequently, the most accurate and reliable results can be obtained by using the median values for the appropriate sex and age group, in our case the men between 50 and 72 years of age. According to these measurements, based on the investigation of eight subjects, a system of fixed points was constructed over the skull and Seffner modelled a third bust, strictly adhering to these values. This bust exhibits all the characteristic features known from the portraits and is more lifelike and expressive than any of them. The final Report of the Commission states that "only a coincidence of the most unlikely kind could have made it possible to come upon a different skull of such strongly pronounced and not at all ordinary form which would correspond to the requirements of genuineness to such an extent as is the case with this skull."

A detailed investigation of the temporal bones undertaken by His in cooperation with Adam Politzer (1835–1920), famed Viennese authority in the field of otology, yielded results suggestive of Bach's musical genius. While His states that it would be futile to attempt to describe the talent of a great com-

[19] Welcker, H. Schiller's Schädel und Todtenmaske nebst Mittheilungen über Schädel und Todtenmaske Kant's. Braunschweig, 1883.

[20] cf. Schaaffhausen, H. Hermann Welcker, Schiller's Schädel und Todtenmaske. Arch. Anthrop. 15: Suppl., 170–185, 1885 and H. Welcker's reply, Zur Kritik des Schillerschädels. Arch. Anthrop. 17: 19–60, 1887.

poser from the structure of his temporal bones he feels sure that a well organized and well developed ear is indispensable in the making of a great composer. In Bach's case an over-all impression of particularly pronounced development of the temporal bones is immediately apparent. It is confirmed by examination of their components: the abnormally large size of the fenestra rotunda (diameter of 2.5 mm. as opposed to a normal of 1.5 mm.[21]); the extraordinary thickness and firmness of the mastoid process, particularly in its cortical part; the remarkable width of the incisura mastoidea; the prominence of the petrous ridge; the unusual hiatus subarcuatus.

Further observations throw an interesting sidelight upon the problems of localization of cerebral function. The impressions of the fusiform and inferior temporal gyri on the skull suggest a particularly strong development of these areas. The large size of the first coil of the cochlea speaks for an unusual development of the cochlear ganglion and, accordingly, of the higher sensory centers. An attempt to interpret these findings is beyond the scope of this paper.

The author wishes to acknowledge the valuable assistance of Mrs. Helenor C. Wilder, Lt. Col. Robert N. Lehman, and Dr. William J. Winter, all of the Armed Forces Institute of Pathology, Washington, D. C.

[21] Cunningham's Textbook of anatomy, ed. by J. C. Brash and E. B. Jamieson. 8th ed. New York, 1943. p. 1145.

Recent Osler Literature

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Brockbank, Edward M. John Ferriar [and] William Osler. 53p. London, William Heinemann—Medical Books, Ltd., 1950. (Price 6s.)

Osler, Sir William. Aphorisms from his bedside teachings and writings. Collected by Robert Bennett Bean; edited by William Bennett Bean. 159p. New York, Henry Schuman, Inc., 1950. (Price $2.50.)

Osler, Sir William. Selected writings. Edited by a Committee of the Osler Club of London. Foreword by Geoffrey Keynes. 280p. London, Oxford University Press, 1951. (Price $4.00.)

Pratt, Joseph H. A Year with Osler, 1896–1897; notes taken at his clinics in the Johns Hopkins Hospital. xxi, 209p. Baltimore, The Johns Hopkins Press, 1949. (Price $4.00.)

Temkin, Owsei, editor. William Osler Memorial Number, Bulletin of the History of Medicine 23:317–418, July–August 1949.

Trent, Mrs. J. C., editor. Thumbnail sketches of eminent physicians: Sir William Osler. 32p. (Reprinted for private distribution from the North Carolina Medical Journal, v. 10, 1949.) Durham, N. C., 1949.

White, William. Sir William Osler: historian and literary essayist. 32p. Detroit, Wayne University Press, 1951 (now in press). (Price $1.50.)

THE number of books and articles published in the last year or two about Sir William Osler tends to confirm Dr. Joseph H. Pratt's statement in his *Year with Osler* (p. v) that "the mark [of a] truly great man is that his greatness is more and more appreciated as we move farther away, [and] time has only served to increase the eminence of [Osler's] position as a man and a physician." As Drs. Pratt, John F. Fulton, W. S. Thayer, and others have said, his main strength and influence was more through his character and life than his teaching and writing. Recent literature on Osler bears this out: great though he was as a professor and author, the true greatness was in the man.

Dr. Edward M. Brockbank's short study, poorly printed and neither well organized nor well written, is primarily concerned with Dr. John Ferriar (1761–1815), an early medical leader in the movement to overcome unsanitary conditions in the slums and factories of his day. He and especially Dr. Thomas Percival worked hard to relieve the sordidness in Manchester and other British manufacturing, to prevent and cure disease, and to probe such other social mat-

ters as child welfare and education. Ferriar wrote a critical treatise on Laurence Sterne, the author of *Tristram Shandy*, and a poem, "Bibliomania," a satire on the disease of book-collecting. A physician with these literary tastes naturally would have attracted Osler. Dr. Brockbank dedicates his book to Osler, who encouraged him in 1903 to write on Ferriar. Seven pages are here devoted to "William Osler at Manchester," giving Dr. Brockbank's reminiscences of W. O. on two visits to Manchester in 1906 and 1911. The final half-page tells of Osler's interest in Ferriar, whom he considered "an enterprising fellow and far ahead of his generation," and regretted that he had no time "to take up 'F.' "

In contrast to the Brockbank volume is the delightfully designed and edited *Sir William Osler: Aphorisms from His Bedside Teachings and Writings*, a little 4-by-6 inch book that could easily be slipped into one's pocket. Collected by Dr. Robert Bennett Bean (1874–1944) on his student rounds with Professor Osler at Johns Hopkins in 1903–4 and 1904–5, they were later assembled for publication. But because of the hubbub over Osler's unfortunate "Fixed Period" address in 1905, the *Aphorisms* were withdrawn and the manuscript lost. The present collection, edited by Dr. Bean's son, Dr. William Bennett Bean, was made from notes found after the elder Dr. Bean's death and from a lost copy of the original in the McGill University Osler Library. Dr. John F. Fulton has supplied a foreword on Sir William's humor, philosophy, and down-to-earth wisdom. Even though set down fifty years ago, these short epigrams are still, as Dr. Fulton says, "as pertinent to the modern student as on the day they were written." Here are a few examples from the 357 "burrs that stick in the memory" (to quote Osler): "Avoid wine and women—choose a freckle-faced girl for a wife; they are invariably more amiable." "Never hide the work of others under your own name." "Acquire the art of detachment, the virtue of method, and the quality of thoroughness, but above all the grace of humility." "We are here to add to, not to get what we can from, Life." "Look wise, say nothing, and grunt. Speech was given to conceal thought." The book's final selection, one for which Osler wished to be remembered, is "I taught medical students in the wards."

The Selected Writings of Sir William Osler, taken from his most important essays and addresses delivered in this country, Canada, and abroad, was originally collected by the London Osler Club to celebrate the centenary of his birth in 1849. The selections point up for a new generation of readers what those who have come in contact with Osler have long known: Sir William's breadth of learning, his wide intellectual background, his civilized and well-rounded point of view, the charm and noble character of one of the most beloved physicians of all time.

One other volume, made up almost entirely of the exact words of the Master (as Dr. Pratt calls him), is *A Year With Osler, 1896–1897*. A member of the

Johns Hopkins class of 1898, Dr. Joseph H. Pratt has written a warm tribute to W. O. in the 16-page introduction, reviewing his personality, his influence, and the impressions he made on his students at Hopkins at the turn of the century. It was during these early years in Baltimore, Dr. Harvey Cushing has said, that Osler's great gifts as an inspirer of youth came to be appreciated at their true worth. In quoting Dr. William H. Welch, the dean of American medicine, that Osler's "life embodied his precepts, and his students cherished his words," Dr. Pratt here publishes these words just as Dr. Osler uttered them in the Hopkins clinic. The clinics were given in a bare room, the students seated in a semi-circle around the patient on a couch and Osler seated at a plain deal table. A history was taken and stress laid on what could be learned by simple observation. Under Osler's guidance the students saw what they had not previously noted, and he taught them that "to see, to touch and to hear," as well as "to auscult," all went for naught if they did not "record." Once more, an example (this one on a leprosy case, pp. 171–73) must suffice to show Osler's "Gallic clarity of style" in words "terse, pithy and pregnant with the wisdom of ripe experience":

Mary S., age 29 years. Complains of swellings and superficial ulcerations. Her father lived here from boyhood. He was always healthy. He died of cholera morbus. Mother died at 40 with cancer of the breast.

This woman lived here until 16, then went to Georgetown, West Indies and stayed there two months. She has lived in Norfolk, Virginia and for the last seven years in Allegheny, Pa.

Her present illness began six years ago when spots about the arms appeared. They gradually developed to the size of marbles. They disappeared at the time of her only pregnancy. They almost disappeared when she had a miscarriage but increased again rapidly after this.

Examination. [A detailed account is given of her face, eyebrows (absent), skin, fingers (one nail missing), hands, feet (two toenails gone), legs, and of her nodules, lesions, and suppurative ulcers.]

The facies is characteristic. Tubercular syphilis in advanced stages is said to simulate it closely, but the macular pigmentation is not seen in syphilis. There are several centers of leprosy in America. The most important is in Louisiana. It is described fully by Joseph Jones. An article by Hyde in the *American Journal of Medical Sciences* reports the distribution of leprosy in this country. In Louisiana there are 83 cases, in Minnesota 120. The settlers from Iceland and Norway brought the disease to Minnesota. California heads the list with 158, due to the presence there of Chinese. All are imported except those in Louisiana. In Tracadie, Canada there were 18 cases, when visited by Osler. Five cases have been reported in this city. Dr. Atkinson collected them. We are exposed to the disease by unrecognized cases coming from the Sandwich Islands and infected Chinese in this country. See Morrow's article in Volume III of the *System of Genito-Urinary Surgery*. Leprosy was introduced into the Sandwich Islands by the Chinese. In India, there are 100,000 lepers. In China, it is extremely common. The disease has gradually diasppeared in Europe. This is very remarkable as in the Middle Ages it was very common, there being then 14,000 lazarettos in Europe. This woman was in Demara, where leprosy prevails, for two months. It was formerly thought to be as contagious as small-pox. This has been disproved. It is contagious in the same sense that syphilis is contagious. But accidental inoculation is more rare than in syphilis. In Ceylon in 100 years there has been no case among the nurses or physicians.

This is a typical example of tubercular leprosy. It is the most common and the most disfiguring type of the disease.

Here we see Osler not only giving a history and description of the patient to his students, but a brief history and description of the disease itself, with notes and a bibliography. Indeed, a remarkable performance, designed to inspire others to devote themselves to advance the science, practice, history, and especially the art of medicine.

The last three items in the list cited above are centenary tributes. The Osler memorial number of the *Bulletin of the History of Medicine* for July–August 1949 contains a note by the editor of the periodical and six papers read at the annual meeting of the American Association of the History of Medicine, 22 May 1949. They are: "Osler as a Pathologist," by Eugene L. Opie; "Osler as a Clinical Teacher," by Joseph H. Pratt; "Dr. Osler as Pathologist," by Charles H. Bunting; "Grace Revere Osler: Her Influence on Men of Medicine," by John F. Fulton; "Sir William Osler and His Portraits," by Cyril B. Courville; and "Osler: An Exemplar of Litterae, Scientia, Praxis, and Doctrina," by Benjamin Spector.

Mrs. J. C. Trent's reprint from the 1949 *North Carolina Medical Journal* in the series of sketches of eminent physicians is a discussion of various aspects of Osler's life and work by twelve writers: Wilburt C. Davison, William deB. MacNider, George Rosen, E. Rosencrantz, Sir Charles Scott Sherrington, Chauncey D. Leake, Norman B. Gwynn, Robert J. Hunter, Frank J. Sladen, W. B. McDaniel, II, William White, and Joseph H. Pratt.

My own *Sir William Osler: Historian and Literary Essayist* reprints in pamphlet-form a paper read at a meeting of the Section of Medical Literature and History, Australasian Medical Congress (British Medical Association), Seventh Session, in Brisbane on 31 May 1950. It deals with the historical and literary qualities in Osler biographical, inspirational, pedagogical, and bibliographical writings. Their content, form, and W. O.'s charm of style place them among the best didactic essays of our day.

The Etymology of Medicine

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THE intention of this article is to reflect upon the origin of the word *medicine*, to find the ultimate etymological source from which the rivers of this all-reaching science have sprung. In so doing, it may be possible to study the semantic processes by which the complexity of medicine as we know it today has evolved from the temple medicine of the Greeks. The plan is to trace the word *medicine* back through its linguistic and grammatical transformations to its primary root.

The words *medicine* and *medical* appear frequently. We have no difficulty in recognizing the variant forms which appear in a medical library: *medicina*, *médecine*, *Medizin*, *meditsina*, and *medycyna*. The linguistic relationship is so patent that it can stop there. Although a cursory examination of a score of books on medical terminology in numerous languages discloses definitions, explanations, and exegeses of extensive scientific vocabularies, it reveals no comprehensive analysis of the word *medicine*.

Just as we recognize the familial relationship of the words for medicine in the various languages, so we have no difficulty in recognizing the grammatical derivatives from the *medicine* we see daily; even the rare, obsolete, or obsolescent forms show the mother word: medicamentally, medicamentary, medicamentation, medicamentous, mediciner, medicining, medify, medicinable, medicinary, medicaster, medicator, and medicatory (1). A medieval Latin word-list (2) gives two further forms which did not enter English: *medicatura* (medical treatment) and *medicinatio* (medicine, drug, or cure); these might have appeared as medicature and medication.

From *medicine*, from the Latin *medicina*, meaning the profession as we know it, it is but one etymological step backward to *medicus*, the physician. Any dictionary, English or foreign, takes us there. The most complete coverage regarding the derivation seems to be that of Henry Alan Skinner in *The Origin of Medical Terms*. He states that it is from the Latin:

> Medicina, the art of healing, or the means of healing, from medicinus, relating to healing, from medeor or medicor, to heal or cure. Medicina is thus a substantive noun from the adjective medicinus; as also medicus the adjective which meant healing or wholesome used as a substantive meant doctor or physician. At first medicus was a general term applied to anyone associated with the healing art and the care or treatment of patients. The Greek equivalent

of medicus was ἰατήρ. Medicus may have some relation to the early Oscan term "meddix," a kind of public official. (3)

The verb form *medeor* is the ultimate origin given us in Dr. Skinner's derivation and in other similar sources. The verb *medeor* itself, however, has a remote ancestry, the ancient Indo-European root MA and MAD and its more familiar hypothetical form MED, meaning to think or to reflect, to give consideration or care to (4). Ernout and Meillet state that the root MED in this sense "is found from one end of the Indo-European kingdom to the other"(5).

In Latin MED appears, in addition to *medeor* above, in the frequentative* form *meditor*, meditate, and all its derivatives. These retain the first meaning of the root, that is, thought in general or meditation. In Greek the word μέδομαι (short e) means to give attention to or to think about. The idea of thought inherent in the MED root leads to the verb μήδομαι (long e) which incorporates a more deliberate sense of counsel or advice, and to the noun μῆδος (plural μήδεα) meaning plans or counsels and subsequently schemes. This last meaning is seen in the Medea of Greek tragedy, Medea the Sorceress, the Schemer, the Cunning. The same root, less evil in intent, appears in Archimedes, Diomedes, Ganymede, Laomedon—names familiar to us from Greek history and mythology. In other languages too there is direct evidence of this extended meaning of thought following MED: the Armenian *mit* (reflection) and the Icelandic *mát* (appraisal).

From the concept of general thought there follows naturally deliberate thought, judgment, or decision, the weighing of fact (and object) or measuring. There is evidence of this element of judgment in the Irish forms *midiur* (I judge) and *ro mídar* (I have judged). The Greek μέδομαι given above implied judgment; the official weight of this judgment takes the form of domination in μέδων or μέδουσα, a ruler. This form also appears in the mythological Medusa known to us through the Perseus legend. The Irish retains this meaning in *con-midathar*, he rules or has the power to.

At this point we can amplify the reference to the early *meddix* given in Dr. Skinner's quotation. *Meddix* appears in Latin dictionaries as coming from *medeor* and means "he who gives thought to," comparable to the Homeric μέδων or μέδουσα, given above as one who rules. Among the Oscans, a people of ancient Italy, it was a magistrate, a MED-dic-s, one who points out the law. The *meddix tuticus* of early inscriptions was the highest Oscan magistrate, as reported by classical and post-classical writers. Dr. Edmund Andrews in *A History of Scientific English* also reports the ancient inscription, translating the word as "a tribune of the people, that is, one to protect them from the rapacity of nobles"(6). I think, however, that his interpretation is less closely

* Frequentative in grammar is a form which expresses frequent repetition; e.g., *quaero*, seek; *quaerito*, ask persistently. Likewise, *medeor*, think; *meditor*, keep thinking and so meditate.

allied to the idea of protection in MED in its extended meaning than it is to the idea of the intellectual judgment of the early root meaning of think or reflect, the major duty of a magistrate in legal judgment. Moreover, this technical sense of giving judgment in an official and legal capacity appears not in Latin, report Ernout and Meillet, but in the other early Italian dialects. This, therefore, seems to substantiate the earlier and primary meaning of MED in *meddix* as one who gives judgment rather than the later meaning of caring for or protecting the people.

Up to this point the original MED root has progressed from thought in general to specific judgment. Now from reflecting and judging come also measuring and weighing physically. This advanced meaning appears in the Gothic *mitan* and the Old High German *māz*, both meaning measure; in the Irish *med*, balance; in the Greek μέδιμνος, a dry corn-measure; in the Latin *medius*, a peck. It appears in English in all the derivatives from the Latin *modus*, measure, quantity, or extent, from which we in turn get modest, commodious, accommodate, mode, modern, moderate; in all of these we can detect a concept of measuring, making fit and proportionate.

The transition from the original simple thinking and the later considered judgment would entail doing something active about it, in other words, to care for. Here we are now approaching the more specific and eventually the completely technical sense of medicine as care and attention to a specialized group, the sick. It is precisely the same process which enabled the Latin word *curo* (to care for) to become care for the sick and ultimately the *cur*ing of them and likewise the simple Greek θεραπεύω (to wait on) to become the *therapy* of the sick.

By the classical period of Latin *medeor* is well established in its third level of developed thought: giving attention to the sick, thence to healing. An archaic form, *medela*,* remedy, was replaced in the classical period by the very word *remedium* and the derivatives we know. A very early inscription suggests *Meditrina*, a goddess of healing, in the October festival dedicated to her, the *Meditrinalia* (7).

We are now approaching MED in its last phase. *Medicus* is the adjective form of the manifestation we know most commonly and its verb form is *medico* or *medicor*. The adjective *medicinus*, pertaining to medical, was used as an adjective in pre-classical and post-classical Latin and as a noun its use is classical. In the feminine gender *medicina* is used in three substantive forms. When used with the word *ars* (art or skill) it signified the profession as we know it, medicine and sometimes surgery; with *officina* (shop) it signified the "office" of the practitioner or the shop where his remedies were purchased; with *res* (thing or object) it signified the medicine or prescription itself (8).

* The *Medieval Latin Word-List* cited above gives on p. 261 from a manuscript of c.731 A.D. *medeliferus*, healing, from *medela*, remedy and *fero*, bring, produce.

It is interesting to note that when it appeared in medieval literature it had not only the meaning of a legal remedy but also of an elixir able to turn lead into gold and copper into silver (9).

Although the Romans made little distinction between the trades and professions, between artisan and artist in our sense of the words, still they consciously devised a hierarchy of professions, as it were, placing on the highest level those who pursued the *artes liberales*, among them the physician, sculptor, architect, teacher, and chemist.

In poetry and post-Augustan prose the participle *medens* from *medeor* was used as the substantive for physician. The usual word, however, was *medicus** pertaining to healing. I have found in the *Corpus Inscriptionum Latinarum* epigraphical evidence of inscriptions, for the most part from Rome, containing not only *medicus* (10) but in addition *medicus chirurgus* (11) (surgeon), *medicus ocularius* (12) (eye doctor), *medicus auricularius* (13) (ear doctor), *medicus veterinarius* (14) (veterinarian), *medicus equarius* (15) (horse doctor), *mulomedicus* (16) (mule doctor), *medicus ludi* (17) (doctor at the games or our athletic physician), *scriba medicorum* (18) (possibly a writer of prescriptions) and also *medica* (19) (woman physician). Further, Orelli cites inscriptions bearing the words *medicus alarum* (20) and *medicus legionis* (21) (our army doctors), *medicus triremis* (22) (ship doctor), *medicus iumentarius* (23) (cattle doctor), *medicus clinicus* (24) (a physician who attends patients in bed, from κλίνη, bed) and *schola medicorum* (25) (medical school). Both the *Corpus Inscriptionum Latinarum* (26) and Orelli (27) give *medicus a bybliothecis*. Although *a bybliothecis* (*bibliothecis*) was the Latin for librarian, the full significance with *medicus* is not entirely clear.

Dr. Edmund Andrews states that *medicus* "simply means an intermediary probably between God and man" (28) and later that *medicus* "implied mediation, probably as suggested earlier, between God and man in a priestly capacity" (29). He offers *meddix* as testimony of this, but it appears to be unsubstantiated in the face of the history of MED derivatives presented in this paper. Dr. Andrews, a keen student of the history of medicine as well as of the evolution of biomedical terminology, knows well and proves ably the development of early medicine in early religion. His physician as the temple mediator between the sick and God is historically acceptable. Moreover, he gives substantial linguistic proof which archaeology and history confirm. His implication, however, as I read it, is that MEDicus is the MEDiator, from MEDius, meaning

* It is interesting to note that the word appears in the name of the famous 14th, 15th, and 16th century Florentine family, De Medici. I am unable to quote the source or to verify the statement that the balls or roundels on their coat of arms are pills in commemoration of their medical origin, in addition to those balls which represent their banking background. G. F. Young in *The Medici* (New York, Dutton, 1913, Vol. 1, p. 20) denies that the family was originally physicians or apothecaries and states that the origin of the balls is unknown.

middle, from an entirely different root. I have found nothing in the dictionaries and etymological sources to support his views.

In our analysis of the word *medicus* from the word *medeor* we have passed through all the stages of crystallization from thinking in general through considered reflection to actively giving care to the sick. Having accepted the universal definition of medicine as the science dealing with the prevention, cure, or alleviation of disease, we can in turn accept the ancient Indo-European root MED as clearly extending to the diagnostic appraisal and clinical evaluation which are the hallmarks of medicine. After meditating on and deliberately weighing the illness, the *medicus*, the agent who also judges, counsels, and attends the patient and his ills, can well be the physician. The clinics and laboratories, the therapies and prescriptions of modern medical practice have long since crept into the original concept of consideration and counsel. Still daily, current medical literature proffers evidence of an inevitable return to the root meaning of *medicine*. In the words of a modern physician,

> The value of the physician is derived far more from what may be called his general qualities than from his special knowledge. A sound knowledge of the aetiology, pathology, and natural history of the commoner diseases is a necessary attribute of any competent clinician. But such qualities as good judgement, the ability to see the patient as a whole, the ability to see all aspects of a problem in the right perspective, and the ability to weigh up evidence are far more important than the detailed knowledge of some rare syndrome, or even the possession of an excellent memory and a profound desire for learning. (30)

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Editorials

A PLEA FOR A RETURN TO THE BOOK

In an address at the opening of Johns Hopkins University, Thomas Henry Huxley commented, "Depend upon it there is only one way of really ennobling any calling, and that is to make those who pursue it real masters of their craft, men who can truly do that which they profess to be able to do, and which they are credited with being able to do by the public."

For many years now, librarians have been attempting to raise their positions vis-a-vis the people who use their libraries. Are Huxley's words perhaps the crux of the matter? Have not librarians, in their tendency to become administrators rather than scholars, fallen between two stools and become masters of neither one nor the other?

What is the "craft" of medical librarians? It is *not* seeing that the books are well arranged, reading-lights adequate, or the technical processes functioning smoothly. These are necessary steps toward librarianship, but merely steps, not librarianship itself. Just as we condemn gluttony while realizing the value of adequate nutrition, so we may condemn the librarian who indulges hedonistically in technical details of library management at the same time that we admit the value of a well-managed library. The end product must not be forgotten: that libraries acquire, catalog, and store books and journals only in order that their intellectual contents may be made available to mankind.

In past times librarians were scholars; indeed people became librarians because "they liked books." What is needed now, perhaps, is a return to that liking and knowledge. The medical librarian who knows what is inside the covers of at least the more important of the books around his shelves and can determine facts about the others from his understanding of the bibliographical tools at his disposal is likely to find he is ennobled by his public without having to lift a finger. For this is the real craft of the librarian—a bibliographic and scholarly knowledge of the intellectual contents of books. Without this knowledge the medical librarian is like Huxley's too-diffusely educated physician, "who finds himself, with the issues of life and death in his hands, ignorant, blundering, and bewildered, because of his ignorance of the essential and fundamental truths upon which practice must be based."

CENTRALIZATION VERSUS DECENTRALIZATION

Medical libraries within institutions sprawled geographically are usually faced with the problem of the growth of small collections scattered throughout

the institution. The questions raised are twofold: how large should the individual libraries become and who is to be responsible for them? Differing answers to these two questions are given by different institutions, based upon tradition, the distance between the main library and outlying parts, the presence or absence of homogeneity of the literature needed in any one spot, and the adequacy of the main collection.

In general, it is safe to say that where the main medical library is unable to supply the needs of its users the institution will be subjected to more pressures for book collections elsewhere than will be the institution whose central collection is adequate and whose library staff is aware of and able to satisfy the demands of its users. This implies that the library is adequately financed, that the librarian knows the work being undertaken throughout the institution, and that the library staff is both alert to recognize lacunae in the collection and to fill them, and knows and is able to handle the medical literature.

Even with these criteria met, however, there may be real need for small library collections. Physical conditions, for example, may make another library necessary, for it is obviously unlikely that a library in one part of town or even in one city will be much help to a detached group in another part of town or in another city. The subject matter of one collection may be entirely separate from the subject matter needed in another collection. Some medical works need to be consulted at the point where the work is going on, and the fact that the book is in the main collection (or, more likely, out on loan) does not help the worker who needs to have it near his desk.

For these reasons there will probably always be central medical libraries and other medical libraries. How should these be set up so that excessive duplication, excessive costs, and inferior service do not result? First of all, only those collections which are absolutely necessary should be started. The desire of every professor and every head of every department to collect all the books and journals he may possibly need and keep them under his eyes should be discouraged. So-called "desk copies" should not become extensive collections. Second, it is wise to place all collections of books under the institution's librarian, who might reasonably be expected to be an expert in the technical matters of acquiring, cataloging, and arranging books, if nothing else. Third, the top limit of size of any new satellite library should be decided upon at the outset, so that an idea of the extent and expense of this library can be had by the fiscal and executive officers of the institution. Fourth, there should be a central file of all the institution's library holdings; whether this file becomes part of the main library catalog, or becomes a separate shelf-list, or is kept in some other fashion will depend upon local conditions. Fifth, it should be agreed that all members of the institution are to be allowed access to material in all the collections maintained by the institution. And sixth, there should be a clear understanding whether personnel of the satellite libraries

are responsible to the librarian or to the head of the group where the library is located.

In general, it has been found better to have the main library manage all the smaller libraries and direct the work of the personnel of these libraries. While the average range of size or number of smaller libraries per institution cannot be determined, it is wise to re-examine these branch libraries at intervals, lest a situation arise (which has happened in at least one large institution) where 7 times the amount spent on the central library was being spent on the branches.

A stand-fast attitude by the medical librarian that no small collections should ever be allowed to grow up is as much a refusal to face realities as a willingness to let many small libraries arise without protest. What is needed, as one British statesman once put it, is not to be neurotically afraid of losing authority (or budgets) but to see that this authority (or budgets) is shared for the best interests of all.

Miss L. Margueriete Prime
President of the Medical Library Association
1951–1952

President's Page

L. MARGUERIETE PRIME

The new President of the Medical Library Association, Miss L. Margueriete Prime, is the Director of the Library and Department of Literary Research of the American College of Surgeons in Chicago. Members of the Association may be assured that its activities will be competently administered in her hands, both because of her experience in her position and because of her wide knowledge of M. L. A. affairs gained through serving the organization in many capacities.

Though she was born in Nebraska, it is Oak Park, Illinois, a suburb adjoining Chicago on the west, which has been her home for many years. After graduation from high school, summer work in the Oak Park Public Library interested her in librarianship, but it was some years later, after gaining experience in other fields, that she entered that profession. Upon receiving her Ph.B. from the University of Chicago she taught in high schools in Minnesota and Indiana. In addition to being Assistant Principal of the Indiana school, she taught most of the subjects in the curriculum there, even Home Economics! Completion of a business course prepared her for other types of positions. From secretarial work for the Society for Visual Education in Chicago she went to the American College of Surgeons. There she has been in charge of the Library and Department of Literary Research since 1931.

Miss Prime has been more fortunate than most librarians whose services are offered mainly to an absentee clientele. While much of the work of her Department is carried on by correspondence and consists of bibliographical research, abstracting, and translating as requested by Fellows of the American College of Surgeons, she has had the opportunity of meeting many of these surgeons in person at the annual Clinical Congresses of the College. She has supervised, even aided in constructing, library booths and exhibits at these Congresses in all the larger cities in the United States. The loyal friends and champions that she has thus made among those attending the Congresses are legion. As one important phase of the American College of Surgeons' work has been the standardization of hospitals, so one all-important interest of Miss Prime has been the raising of standards for hospital medical libraries, the development of adequate, properly administered collections for the use of medical staffs. Miss Prime has acquainted herself with all aspects of hospital

medical library work, both by study of the subject, and in actual service in the Augustana Hospital library in Chicago. She served as Chairman of the Medical Library Section of the Tri-State Hospital Assembly of the American College of Surgeons from 1941 to 1948 and lectured on the history and development of the hospital library to students in the Program in Hospital Administration, Northwestern University School of Commerce, from 1943 to 1950. She has written numerous articles on hospital medical library work, such as "Hospital library and its administration," "Organization of medical library facilities to aid internes and residents," "The hospital medical library (a list of books recommended for use in the hospital medical library)," and "The physician and his medical librarian."

Few in the Medical Library Association are as well acquainted with its organization and activities as Miss Prime. She has attended its annual meetings regularly since 1936, has served a three-year term on its Board of Directors, was a member of the Publications Committee for several years (one as its Chairman), was a member and Chairman of the Sub-Committee on Certification, was a most helpful adviser to the Regional Groups, wrote the chapter on Cataloging in the *Handbook of Medical Library Practice*, and has represented the Association on several joint committees, such as the Joint Committee on Hospital Libraries, 1943–1944, and the Committee on Medical Library Service for the Armed Services of the U. S., 1942–1944. The welfare and advancement of the Association has always been uppermost in her mind, and she has given careful thought and attention to all the assignments which have been given her.

By her own admission Miss Prime is "neither musician nor athlete," but she cannot deny a liking for tramping through the Indiana Dunes State Park. She has time for other extra-curricular activities too, though caring for a job and a home would seem enough to occupy all of one's days. These are her main interests and pleasure, but she still has time for friends, some in her Episcopal Church Evening Guild, some in her University of Chicago Club, Deltho, and others, just friends. And all these, as well as those in the Medical Library Association who know her, will agree that she is genial, invariably friendly and "good fun," but is also a wise adviser, a straight thinker, and able to direct the Association's activities in an admirable fashion.

WILMA TROXEL

Association News

FOREIGN FELLOW

March 16th marked the arrival of our Irish Fellow, Miss Jessie B. Webster, who is the third recipient of awards for the current year. At present she is Librarian of the Medical Library of Queen's University of Belfast, Northern Ireland, a position she has held since 1943. Miss Webster will become Librarian of the library that will become the medical library center for Northern Ireland, serving the Northern Ireland Hospitals Authority, the members of the Ulster Medical Society, and the staff of the Medical School and Hospital of the Queen's University of Belfast. She is an Associate of the Library Association.

Miss Webster, after visiting libraries in Washington, D. C., and Chicago, will study and observe in the Washington University School of Medicine Library with Miss Marion Murphy. She will then visit Miss Isabelle Anderson of the University of Utah Medical Library, Salt Lake City, before going to the West Coast where Miss Clara Manson of Stanford University Medical School is arranging an interesting program for her. This year those of our fellows who can attend the M. L. A. meeting in Denver will be given a chance to visit western libraries.

MIDWEST REGIONAL GROUP OF M. L. A.

During the A. L. A. Midwinter Meeting in Chicago, January 30 to February 3, 1951, the Midwest Regional Group of M. L. A. had a meeting. They met on Thursday evening to hear three papers on medical library service to (a) physicians, (b) nurses, and (c) other libraries. In the second paper Dr. Louise M. Schmitt described the growing need for librarians in nursing education centers and in particular the role of the librarian as an educator in such a center. Miss Helen Yast of the American Hospital Association Library described the inter-loan and bibliographic services of a number of libraries.

NEW YORK REGIONAL GROUP OF M. L. A.

The semi-annual meeting of the New York Regional Group of M. L. A. was held on Saturday, April 14, 1951, at the New York University Faculty Club, with 92 present. The program was as follows:

New Abstracting and Indexing Tools. . . . . .Thomas P. Fleming

Panel Discussion of Problems on Interlibrary Loans

Miss Helen Bayne, Chairman

Mr. Gilbert Clausman
Miss Alida Roochvarg
Miss Rosalie Saitta
Mr. Allan Salant
Lunch and Business Meeting
Mechanical Aids in Medical Libraries.....G. E. Fielstra
Panel Discussion of Administrative Problems in Medical Libraries
Miss Eleanor Fair, Chairman
Miss Marjorie Henderson
Miss Helen Hlavac
Miss Winifred Sewall

M. L. A. DIRECTORY

The Directory of Libraries belonging to the Medical Library Association has been published. Copies, at $1.50 each, may be obtained from Mr. Frederick G. Kilgour, Yale Medical Library, 333 Cedar Street, New Haven 11, Connecticut.

News Items

SUE BIETHAN RETIRES

Miss Biethan was born at Blackfoot, Idaho, was educated at Mills College, where she received the degree of Bachelor of Letters in 1907, and came to the General Library at the University of Michigan at the beginning of February 1917. She was appointed Assistant in the Medical Reading Room on October 1, 1919, and was put in charge two months later. Her service in this capacity has been continuous since February 1, 1924, when she returned to the General Library after a brief period of employment as Assistant Librarian for the American Medical Association in Chicago. Miss Biethan has successively held the titles of Medical Librarian and Chief Medical Librarian. Her jurisdiction includes the University Hospital Library and her staff is made up of five full-time professional assistants.

Miss Biethan has long been active in the work of the Medical Library Association and has regularly attended its annual meetings. She served as Secretary of the Association for five years, from 1926 to 1931, was Manager of the Medical Library Association Exchange from 1926 to 1928, and acted as Chairman of the Committee on Incorporation from 1931 to 1934. She has had a large share in building up the excellent medical collections at Michigan and in developing library service to a high level of effectiveness. When she leaves the University she will be greatly missed, not only by her associates on the Library Staff but also by the Faculty and students in the Medical School who have profited by her expert assistance and counsel.

WARNER G. RICE

SUMMER COURSES IN MEDICAL LIBRARY WORK

Summer school courses in medical library work are being offered in 1951 at Columbia University and Emory University. The successful completion of either course will enable a student with a bachelor's degree and one year's library school training to qualify for Grade I certification by the Medical Library Association.

The course at Columbia is in medical literature and consists of a survey and evaluation of library resources in medicine, with emphasis upon bibliographical and information sources. Some attention is being given to special service problems in medical libraries. The course carries a credit value of 3 points.

The course at Emory, with a credit value of 5 quarter hours, meets for ten hours a week from June 12th through July 18th. The purpose of the course is to give an introduction to medical library resources and their use in medical education, medical research, and the care of the patient. A survey of the literature, library techniques, and medical library administration is included.

MEDICAL LIBRARY ASSOCIATION COMMITTEES PRAISE BIBLIOGRAPHIES

Current List, Excerpta Medica, Q.C.I.M.

On April 7, 1951, the Committee on Abstracting and Indexing and the Committee on Serials held an informal joint meeting in New York City. At the meeting tribute was paid to three current medical bibliographies. The youngest to be mentioned was the *Current List of Medical Literature*, which will celebrate its first birthday on July 1, 1951, and the oldest was the *Quarterly Cumulative Index Medicus*, which has just appeared in a new typographical form. *Excerpta Medica* is already three years old.

Special improvements were noted for all the works. The *Current List* has added additional titles to be listed and has changed the form of its Subject Index. *Excerpta Medica* has switched to *World List* abbreviations and agreed to other changes, and the *Q.C.I.M.* is beginning to catch up with its backlog of work. The consensus of the members of the Medical Library Association Committees was that medical bibliography seems to have turned the corner out of its bad era.

NEW YORK ACADEMY OF MEDICINE LIBRARY

Views of the Academy building, exterior and interior, have recently been put on postcards. The pictures show the 103rd Street facade, the main entrance, the reading rooms, the Rare Book Room, and details of the interior architecture. The postcards are available from the Academy Library, 2 East 103 Street, New York 29, at 5 cents each, or 30 cents for a set of 9 cards.

CHICAGO MEDICAL SOCIETY MOVES TO JOHN CRERAR LIBRARY BUILDING

The Chicago Medical Society has moved into offices on the ninth floor of the John Crerar Library building, facing Michigan Avenue and Randolph Street. The Board of Directors of the Library about three years ago adopted the policy of encouraging societies to establish offices in the Crerar Building, the purpose being to develop a Science Center. At present, in addition to the Chicago Medical Society, the Institute of Medicine, the Western Society of Engineers, the Chicago Section, American Chemical Society, and Chicago

Chemists Club are established in either the library building or the adjacent connected building at 84 East Randolph Street. On January 16, 1951, the Trustees of the Chicago Medical Society voted a contribution of $2500.00 to the John Crerar Library; they hope that this can be continued as an annual contributing membership.

BLAKISTON COMPANY OPENS A NEW YORK EDITORIAL OFFICE

The Blakiston Company, Philadelphia, has announced the opening of an Editorial Office at 575 Madison Avenue, New York 22, New York. The representative is Mr. Paul K. Lapolla, Associate Editor.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

In January 1951 there was a change in editorship of the American Journal of the Medical Sciences. The Editor is Dr. Richard A. Kern, Professor of Medicine, Temple University School of Medicine; the Associate Editor is Dr. Thomas M. Durant, Professor of Clinical Medicine at Temple, and a new Assistant Editor is Dr. Chris J. D. Zarafontis, Associate Professor of Internal Medicine at Temple. These men succeed the former editorial board headed by Dr. E. B. Krumbhaar.

NEW A. M. L. PUBLICATIONS

The following are recent publications of the Army Medical Library:

Army Medical Library Classification; Medicine. First Edition, Washington, D. C., 1951, 275p. Copies may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., at $1.25 a copy.

Army Medical Library Annual Report for the Calendar Year Ending 31 December 1950. 90p. Free. Apply to Director.

Army Medical Library Policy on Scope and Coverage. 1951, [52p.] ". . .major documents which have resulted from the Army Medical Library's attempts to define more specifically its policies concerning the scope and coverage of its collections." Free. Apply to Director.

The Pituitary-Adrenocortical Function; ACTH, Cortisone and Related Compounds. 1950, 366p. Free. Apply to Director.

REVISION OF THE L. C. CLASSIFICATION SCHEDULE FOR MEDICINE

According to the *Library of Congress Information Bulletin*, January 22, 1951, the fifth edition of *Class R Medicine* should be published late this year. This is a thorough revision of the *R* schedule; the revision has been done by Mrs. Sarah G. Mayer.

PERSONAL NOTES

Dr. John F. Fulton has been named to fill the newly created position of Sterling Professor of the History of Medicine at Yale University. He will also continue to carry on certain phases of his physiological research.

Mr. Joseph Groesbeck, Assistant Librarian for Acquisitions at the Army Medical Library, was granted a leave of absence of ninety days to permit him to accept a temporary appointment as Chief, Processing Division, of the United Nations Library in New York. His duties included general direction of the Acquisition, Cataloging, and Indexing Sections, and the study of a number of specific problems including purchasing procedures, incorporation of the Woodrow Wilson Library of League of Nations material into the UN Library, the exchange of UN documents, definition of the Library's collecting fields, and preparation of an acquisition manual.

After nearly 29 years of service *Miss Florence L. Duvall*, Head of the Cataloguing Department of the New York Academy of Medicine Library, retired on January 31, 1951. At an informal reception the Staff of the Library and other friends of hers expressed their warm affection and the great esteem in which she is held by all who know her. *Mrs. Erna Russo*, who has been First Assistant in the Cataloguing Department, has succeeded Miss Duvall as Head of the Department.

Mr. Robert Lewis is a new staff member of the Biomedical Library, University of California, Los Angeles.

Mrs. Caroline Jones Barker (Illinois '50) is now Assistant in charge of integration at the Calhoun Medical Library, Emory University, Georgia.

Dr. Ilse Bry, Librarian of the Abraham A. Brill Library of the New York Psychoanalytic Institute, was at the Army Medical Library from May 2nd to 8th, making a preliminary survey of its books on psychoanalysis and psychiatry.

Obituary

MISS JANIE TURNER

Miss Janie Turner, Librarian of the University of Georgia School of Medicine Library, died on December 19, 1950. She had worked at the Library since 1912 and had been Librarian since 1933.

Book Reviews and Journal Notes

ALSOP, GULIELMA FELL. *History of the Woman's Medical College, Philadelphia, Pennsylvania, 1850–1950.* Philadelphia, J. B. Lippincott, 1950. 256p. Port., illus. $4.00.

Representing a real and unique contribution to the study of medical education in the United States, this volume is noteworthy in depicting the centennial history of a leading medical school which is unique in that it is the only surviving school devoting itself exclusively to the training of women as physicians. In these days when higher education for women in all fields is as much an accepted fact as is the right of women to vote, it is difficult to comprehend the struggle which brought about these achievements, today so vital a factor in our American way of life. The acceptance of women in medicine parallelled the suffrage movement in this country, and the two causes were sponsored by many of the same pioneers. This story is interestingly presented in the history of the Woman's Medical College. Dr. Alsop has been unusually successful in re-vivifying for us these leaders in medical education for women: Ann Preston, Quaker, and the first woman to attain professorial status as well as the first to become dean of a medical school; Rachel Bodley, scientist imbued with missionary zeal; Clara Marshall under whose guidance the School was reorganized to become a modern medical college, and many others.

The period from 1850 to 1950 covers not only the story of higher education for women but also that of the moulding of ideas regarding medical education into the concepts of today, and both developments are here well described. In addition to the factual information, the author has achieved a somewhat informal and interesting presentation, rich in quotation from the words of the principals themselves, thus giving life not only to the drama of the history but also to these women, pioneers not in a new land but in a new world of knowledge, leading the way for all the American women who came after them.

MARY LOUISE MARSHALL

BARRINGER, EMILY DUNNING. *Bowery to Bellevue; the Story of New York's First Woman Ambulance Surgeon.* New York, W. W. Norton & Co., Inc., 1950. 262p. $3.00.

At the turn of the century the first skirmishes of the battle for the admission of women to medical schools had been won, but the further necessary hospital training was nearly unobtainable. This account of the struggle of the first medical woman to obtain and carry through an internship in a general hospital in New York City is a clear, vivid, and dramatic story.

A protected childhood of the Victorian era in a family of wealth and social standing was interrupted by financial disaster when the author was about eight years of age. Her mother was unprepared for the task of supporting six children but faced it gallantly, uniting her young family in a close and loyal group. She it was who decided that, somehow, Emily must go to college, and this decision was backed by the enthusiastic support of the brothers and sisters. Medical school followed, first at the Medical College of the New York Infirmary for Women and Children and then at Cornell.

The house staff appointments in the general hospitals of New York were given by competitive examinations to which women were not admitted. Dr. Dunning, after personal calls on all members of the Medical Board and all Trustees of the Mt. Sinai Hospital, was permitted to take the examinations on the understanding that she would not receive an appointment whatever her standing; later she found that she had won first place.

She then canvassed the city hospitals for one with adequate living quarters to permit a woman on the staff, and Gouveneur Hospital was found to have ample quarters. Again there came a series of personal calls on the members of the Medical Board, again an examination well passed, and again an appointment refused, this time by the City Health Commissioner. A year later, with a change in the city administration under Mayor Seth Low, the hospital appointment was at last achieved.

This was but the introduction to a difficult two years, during which her colleagues of the house staff made every effort to drive her out by all means available, no holds barred. The details of this contest might seem incredible to those who have not had to some degree a similar experience, and with expurgations the tale would provide material for Hollywood. With courage, health, and the important cooperation of the nurses, patients, ambulance drivers, the police of the district, and, as always, of her family, she succeeded in carrying through.

The book is thoroughly readable. It is source material of the progress of women in medicine, and describes a pattern of life, combining medicine and marriage, experienced by few women before her time but by many since.

DOROTHY H. ANDERSEN, M.D.

SLAUGHTER, FRANK G. *Immortal Magyar: Semmelweis, Conqueror of Childbed Fever.* New York, Henry Schuman, 1950. 211 p. $3.50.

Vienna, one hundred years ago, was the great medical teaching center of the world as it was to be for generations to follow. The autopsy table was surrounded by eager students, and pathology, gross and microscopic, was carefully studied and taught. But the knowledge of the relationship of cause to effect in disease, in so far as the role of infection (bacterial) was concerned, was as yet an unopened book.

Ignaz Philipp Semmelweis came upon this scene in charge of the First Clinic of the Lying-in Hospital of the Allgemeine Krankenhaus. Puerperal fever (childbed fever) in Vienna as in all large centers was a scourge and a dread. And in the First Clinic, under Semmelweis, mortality was four times that of the Second Clinic, in certain periods one out of every five mothers dying after a normal delivery. Why? The First Clinic was a much more active teaching clinic than the Second, probably due largely to the greater drawing power of Semmelweis himself; students digitally examined every new patient, going from cadaver or from an infected mother to doomed new admittance with only cursory hand cleansing, if even that.

Semmelweis observed the similarity of symptoms in the "pyemia" case which reached the postmortem table with those exhibited by the puerperal fever patient. He prescribed rigidly enforced hand-washing and thorough use of chlorinated lime before vaginal examinations, and the page was turned. Collins in Dublin, White in Manchester, and Oliver Wendell Holmes in the young United States had fostered the use of cleanliness in maternity care, but Semmelweis's advance was in the enforcement of the use of an antiseptic, even though not knowing what transmitting agent he was destroying.

Semmelweis was not the father of antisepsis—we must hand that to Lister twenty years later—but his tie-up of cause and effect began the saving of thousands of lives, and the near abolition of the terrible menace of the childbed.

The last half of Dr. Slaughter's book tells of the bitternesses of Semmelweis's fight to carry his message to the world against the caustic diehard opposition of many in his own profession, Virchow among them, and his political and professional struggles. One of his own saddest memories all his remaining life was the knowledge that he himself must have killed many a young mother with his own infected hands before he saw the light.

Dr. Slaughter writes with a facility and skill that holds the reader's attention to the end better than many a current thriller.

ROBERT RANSDELL, M.D.

DUBOS, RENÉ L. *Louis Pasteur, Free Lance of Science*. Boston, Little Brown & Co., 1950. 418p. $5.00.

Many who see this title will ask immediately: Is this just another biography of Pasteur? Can it add to the fine descriptions of his life and work now available? The reading of this book quickly allays any idea that it is only another account of this heroic figure. It does more than tell an exciting story of great discoveries. Dubos recreates and illuminates many of the forces which drove Pasteur to search for new facts and a deeper understanding of life. The biography describes the continuous stream of "unescapable logic," as Pasteur called it, which led from one experiment to another. With clarity and artistry Dubos has sharpened his biographical portrait by presenting a finely sketched

background of the intellectual and spiritual state of the times. The whole adds up to a superb document of human endeavor.

In the first three chapters, "The Wonderful Century," "The Legend of Pasteur," and "Pasteur in Action," the reader is introduced to different aspects of Pasteur's character, set against the times in which he lived. The man himself emerges from these early pages. His great capacity for being correct and for defending the truth with intensity frequently failed to endear him to his contemporaries. His outspoken resentment at their criticism often led to acrimonious debate, but to Pasteur this was always a stimulus to further experimentation. He considered that the attainment of truth through science was one of the greatest joys permitted to man.

The next nine chapters of the book take up Pasteur's successive investigations in the fields of crystallography and of microbiology. The various contributions which he made to chemistry and biology are beautifully and simply presented. Technical verbiage has been avoided with no sacrifice of accuracy. As in the first three chapters, the reader travels back and forth in time so that when experiments made early in Pasteur's life give direction to later experiments in other fields the continuity in the pattern of investigation is immediately presented. This method of wandering backward and forward in time is handled with great skill and proves to be very revealing of the mind of the scientist. We seldom know our contemporaries except at intervals in their lives, and, hence, it may be that in such a biography as this we achieve more insight into a human being than often is possible.

In the last two chapters of the book, "Mechanisms of Discovery," and "Beyond Experimental Science," Dubos devotes his attention to a critique of the mechanisms of the genius of Pasteur. There are many quotations here as earlier which the reviewer finds captivating, since they give an unusual insight into the man and the scientist. In developing the growth of Pasteur the scientist, Dr. Dubos seemed often to have in mind the quotation from Ecclesiastes, cited early in the book, "To everything there is a season and a time to every purpose." Near the close of the book Dr. Dubos, in a philosophical aside, expressed this thought again, as it applies to Pasteur and to other research workers, as follows: "The few who reach the intuitive perception of truth most be preceded by the host of workers, most of them forgotten, whose role it has been to accumulate the facts that constitute the raw material of successful working hypotheses, of the intuitions of discovery. The immense wastefulness of organic life, which demands that thousands of germs perish so that one may live, has its counterpart in the processes of intellectual life; many must run, so that one or a few may reach the goal."

Those who read this biography will be doubly rewarded. They will be enthralled anew by a story of scientific endeavor and achievement, as exciting as any ever lived, told with a rare combination of accuracy and literary charm.

In addition, they will be enriched by the perspective and insight which makes this biography more than a biography of one man. All who have learned "to wonder and question," however falteringly, will be grateful to Dr. Dubos, because he has proved to be such a literate and sympathetic interpreter.

BEATRICE CARRIER SEEGAL, M.D.

REED, HOWARD S. *Jan Ingenhousz—Plant Physiologist; with a History of the Discovery of Photosynthesis.* Waltham, Mass., The Chronica Botanica Co.; New York City, Stechert-Hafner, Inc. 1949. Vol. II, pp. 285–396, $3.00.

This annotated, complete reprint of Ingenhouz' "Experiments upon Vegetables" by the late Dr. Reed makes available a book which has long been out of print. Dr. Reed has added very interesting introductory material as well as a general history of the chemical studies which led to the discovery of photosynthesis.

Most of the sections of the original text are followed by comments which trace subsequent development of that particular subject. These comments are very interesting and it is indeed unfortunate that they are printed in a smaller size type which is somewhat laborious to read. The illustrations in the book are of unusual interest. Many of them were secured by Dr. Verdoorn from the Netherlands and have not been published previously.

The first section of the French edition is included in Appendix I.

This book will be of interest not only to historians of plant physiology but also to medical historians since Ingenhousz was one of the great physicians of that time.

M. W. PARKER

BERNARD, CLAUDE. *An Introduction to the Study of Experimental Medicine.* New York, Henry Schuman, Inc., 1949. 226p. $3.00.

The original edition of this work of Claude Bernard was published in France in 1865. It was translated into English by Henry Copley Greene, and the translation was published by Macmillan in 1927. A comparison with the Macmillan edition leads one to believe that the Schuman release is a photographic reprint. The title page has been changed to fit the change in publishers, and the publication date has been changed, but there appear to be no changes in the body of the work, other than the correction of a few minor printing imperfections. The size and content of the individual pages are unchanged, as is the total number.

A comparison with the third French edition of 1912 reveals that the French edition has as a frontispiece a likeness of Claude Bernard, and has a more inclusive table of contents; but the English edition has instead an introduction written especially for the 1927 edition by Lawrence J. Henderson, and an obituary written by Paul Bert in 1878 shortly after the death of Claude Ber-

nard. The introduction gives a good appraisal of the greatness of Claude Bernard as judged by a man of science some fifty years later, whereas the note by Paul Bert gives us the view of Bernard as seen by one of his contemporaries.

Since many reviews were written concerning the 1927 English edition of this book, one might wonder if reviews of the reprinting are justified. Considering the stature of Bernard, his influence on experimental medical science, and the soundness of his views, I feel that they are. Each generation of students, and investigators, in the medical sciences should be encouraged to read the *Introduction*, and if additional reprintings and reviews will stimulate such reading then the space devoted to the reviews serves a good purpose.

It is interesting that Bernard stated that "We shall therefore make no claim to philosophy," for the material presented is in large part the philosophy of the experimental method. The reviewer happened to read concurrently Max Planck's *The meaning and limits of exact science*, Science, 110: 319–327, 1949, and the similarity of the philosophical concepts in the two is striking. The statement that "Men of science learn every day from experience; by experience they constantly correct their scientific ideas, their theories; rectify them, bring them into harmony with more and more facts, and so come nearer and nearer the truth," expresses the tenor of both. The words are those of Bernard.

Bernard said that the experimental method had been so well formulated by the physical and chemical sciences that he had nothing to add to the method itself and hoped only to establish the method within the biological sciences. Actually, Bernard's description of what the experimental method is and how it should be applied is classical and is as good as can be found anywhere, even in modern works.

Although there are statements which date the book, such as the one that the functions of the spleen, the thyroid gland, and the suprarenal gland are unknown, most of it is thoroughly modern in outlook. Bernard stressed the importance of accurate observation, the primary and incontestible position of facts, yet stated that, "particular facts are never scientific; only generalizations can establish science."

Bernard saw more clearly than many men that words can be coined and used to hide a lack of information while giving the appearance of knowledge. He objected to the use of such words, except when accompanied by a clear statement of intent.

In discussing the meaning of the word science, Bernard emphasized that the different fields of science are creations of the mind and do not necessarily exist in nature. "One science, in fact, is separate from another science only because it has a special point of view and a particular problem." He pointed out the difference in approach of a purely observational science, such as astronomy, and a science both observational and experimental, such as physics, chemistry, or physiology.

There are so many different matters discussed in this little book that it is feasible to touch on but a few. There are discussions of interrelations of scientific disciplines; mathematics and biological science, physiology and anatomy, physiology and clinical medicine, physical sciences and biological sciences, and empiricism and experimental science. There are statements which would serve well for special quotation to medical students, such as, "A physician, in fact, is by no means physician to living beings in general, not even physician to the human race, but rather, physician to a human individual, and still more physician to an individual in certain morbid conditions peculiar to himself and forming what is called his idiosyncrasy." There are discussions of ethical matters such as the justification for vivisection or for experimentation on a patient. There is an excellent section on justifiable and unjustifiable methods of criticism within the field of science. There is presented the concept that, "there never are any unsuccessful experiments." There is a section concerning the usefulness to medicine of experimentation on lower animals.

Bernard could have saved a few pages by omitting some repetitions, but the repetitions do serve to make each section more nearly self contained. Otherwise, there is little to criticize. This does not mean that all the concepts presented are above question; but they are presented along with Bernard's justification for them and the justification in each case has considerable merit. The very nature of some sections would invite criticism from certain sources. The text is legible, free from typographical error, and, except for an incomplete phrase on page 131, is quite readable. In attempting to follow closely the French text, the translator sometimes used word sequences that would seldom occur in a work written originally in English, but that seems unavoidable when accuracy is as desirable as it was here. The book is highly recommended to anyone concerned with experimental science and especially to persons in the experimental biological sciences.

FRANK HARRISON, Ph.D.

Freud: Dictionary of Psychoanalysis, edited by Nandor Fodor and Frank Gaynor, preface by Theodor Reik. New York, The Philosophical Library, Inc., 1950. 208p. $3.75.

This book, which is variously called a dictionary (according to the title), a glossary (according to the jacket), a set of definitions (according to the introduction), or one of quotations (according to the preface), is an uneven, poorly selected, and inadequately coordinated *mêlée* of shorter or longer bits of Freud's writings.

In fairness to the editors, one should say that some of the quotations are well chosen, precise, up to date, and instructive. Others, however, show a marked lack of the editors' understanding of what a student in psychology or a better informed lay person expects to find in a tome of this sort.

How superficial this array of sentences, paragraphs, bon-mots, etc., is may be seen from the following example: Page 87, "Hysteria—*A passive sexual experience before puberty:* this is the specific aetiology of hysteria. (Cf. *Anxiety-Hysteria.*) HAN." (Abbreviation for heredity and the aetiology of the neurosis: Coll. Papers, Vol. I). Thus the main definition is an accurate quote from the pen of Freud but as of today 55 years old, the paper quoted having been written in 1896. Since no other definition is given and since the uninitiated could not gather that the editors are presenting Freud's opinion on hysteria when psychoanalysis was in its infancy, such information is useless to the researcher and harmful to the student.

From a researcher's point of view the book's value stands up even less. There is no excuse for having omitted page references. One would select a well known edition for this purpose. As time goes on, the collector of Freudiana will have to use a reference edition just as is the case, for instance, with the Goethiana. Secondly, the cross references are inadequate or altogether absent. For instance, "eating" (on page 62) has a quotation of four sentences. No cross references are attached. The same material, however, is used to elucidate the meaning of (1) "anorexia" (page 8), using the first sentence of the above-mentioned material, and (2) "vomiting" (page 197), using the third sentence. Neither "anorexia" nor "vomiting" shows a cross reference to "eating."

In conclusion, it may be said that none of the rather exaggerated claims which introduce the book are borne out. It does not, as claimed, "place *all* Freudiana within easy reach of professional and non-professional researchers." It cannot, as claimed in the preface, "be used to correct many textbooks, now printed." However, this book, overhauled by a scholar of Freud's, writing with the help of a librarian, might become useful for orientation and direction. As it stands now, it is a "portable" Freud, which is expendable.

MARCEL HEIMAN, M.D.

DYER, HELEN M. *An Index of Tumor Chemotherapy.* Washington, D. C. National Cancer Institute, National Institutes of Health, 1949.

A knowledge and evaluation of past work will always be an important prerequisite for productive research. Any research worker—whatever his especial interest—will appreciate the importance of Dr. Dyer's orderly and comprehensive monograph, *An Index of Tumor Chemotherapy.* Cancer research workers will find it invaluable.

The publication includes data gathered from American, English, French, Japanese, German, Italian, Portuguese, Scandinavian, and Spanish scientific literature. Examination of the 329-page monograph reveals 4 main divisions: (1) an introductory section including an historical résumé and information regarding the organization of the text; (2) a table of chemicals, tests and results; (3) an alphabetical list of chemicals listed; and (4) a bibliography.

Section 1 traces briefly the development of chemotherapy from its beginning with the work of Ehrlich in 1908 to the present. The use of caustics, dyes, inorganic chemicals toxic to protoplasm, chemicals designed to attack possible protozoan agents of cancer, enzymes, bacterial filtrates, tissue extracts, body fluids (blood, serum, urine) antisera, dietary factors, vitamins, and vitamin antagonists are some of the agents which have been investigated.

This first section also includes an explanation of the way in which material was selected for inclusion in the monograph. Dr. Dyer states that she has listed only observations on the growth-inhibiting or damaging effects of test material on the tumors of tumor-bearing animals. Procedures referred to as "screening methods" (Karnofsky) are not included. These consist of evaluation of tumor-injurious effects through use of tissue cultures, histological examination of tissue removed after short term in-vivo residence, and tests for growth of tumors after in-vitro exposure to the injurious agent.

Section 2 lists 5,031 chemical tests. Each agent is given a number. The type of tumor, host (species and number of test animals), therapy (dosage, number of doses, route), and effect claimed (on tumor and on host) are charted. Finally, the number of the reference and date complete the information given for each chemotherapeutic test.

Section 3 lists the chemicals in alphabetical order along with the corresponding number used in Section 2, thus making it easy to locate the especial chemotherapeutic test and results.

Section 4 gives the bibliography of the 2,213 references from which the data are taken.

No effort is made to evaluate tests. This is an "index" only. Recognition of the difficulties encountered in preparation of such an index serve to increase appreciation of Dr. Dyer's work.

ANNA DEAN DULANEY, Ph.D.

CROWE, MILDRED R. *The Medical College of Alabama Library, A Five Year Report, 1945–1950*, illustrated by Helen Kovacs.

Medical libraries have not kept pace with other libraries, particularly the public libraries, in publicizing their accomplishments through the media of reports. A few of the larger medical libraries have issued reports but it remained for Miss Crowe to make us aware of the report's possibilities. The format is so attractive that it immediately catches your eye and makes you want to examine the contents further. The services the library is rendering are diagramed in a very clear manner. To lend attractiveness and clarity to the diagrams, a color scheme is very effectively used. Miss Crowe has displayed a great amount of imagination in the selection and organization of her "special files." It is these special files that play a very important part in the services a library is able to render. Everyone expects a library to have the standard

works of reference, but it is the special files that give the library its reputation and enable it to do those extra things for its patrons. An examination of the various services of the library shows a phenomenal growth which should be extremely gratifying to the library staff. Miss Crowe has not neglected to appraise her library. Under the heading "Appraisal of the Library," she discusses the important factors in a library's appraisal, and the factors to be appraised. Under the latter heading she lists her library's strong and weak points. This is one of the most important features of the report, for as long as we are able to examine our work in an objective manner then we are continuing to advance. It is only when we become satisfied with our accomplishments that we are on the down-grade. From an examination of this report it appears that the Medical College of Alabama Library will have a long and continuous growth under the direction of Miss Crowe.

WILLIAM D. POSTELL

UNDERWOOD, E. ASHWORTH: *The evolution of the medical book.* Chemist & Druggist Export Rev., Lond., 1950, 11: 61–70.

This brief presentation of the evolution of the medical book by Dr. E. Ashworth Underwood, the distinguished Director of the Wellcome Historical Medical Museum and Library, is an account so rich in content that it bears reading and re-reading. Dr. Underwood's is an easy, pleasant style, and his writing reflects long and close company with the subject.

The author points out that the medical incunabula of the fifteenth century are the immediate ancestors of the present medical and scientific textbooks but that even these had more remote forebears, which determined their form and general appearance. There is the Hammurabi Code of about 2000 B.C., many of the laws of which concerned the medical profession. Dr. Underwood tells us "This document puts to shame our modern textbook!" and described it as follows: " . . . a black diorite block eight feet in height. The main body of the block is occupied by the writing, and above is a group in relief, showing the King receiving the code from the Sun-god." But this was one of the elaborate documents of that period. For ordinary writings the Sumerians used tablets of clay.

Thus the various stages of the early development of the medical book are unfolded. The papyri of ancient Egypt are discussed, the introduction of parchment as a writing material is mentioned, the division of labor involved in the preparation of the beautiful and often complex manuscripts of the Middle Ages is explained, and the characteristics of the medical incunabula (those books produced during the infancy of printing, the period from its invention to the year 1500) are stressed. From this date the evolution of the book is traced by century.

Trends in form of type, illustration, and binding are discussed, and inter-

esting examples of individual works are described throughout the account. Some of the more important ones are the first medical incunable, *De sermonum proprietate* by Rabanus Maurus, the *De humani corporis fabrica* of Andreas Vesalius with its famous woodcut title-page, the *Oeuvres* of Ambroise Paré, which written in French and not in Latin were read by the barber-surgeons, who were ignorant of Latin, and the *Tabulae sceleti et musculorum corporis humani* of B. S. Albinus, the plates of which represent the zenith in copper-plate illustration. We learn from these descriptions such interesting information as that William Harvey's epoch-making *De motu cordis* was produced in "a small and rather mean quarto" and that the thin volume, *Inventum novum ex percussione thoracis humani*, an "apparently trifling work announced the discovery of the method of percussion of the chest . . ."

It is all pleasant as well as rewarding reading.

MARJORY C. SPENCER